DECEMBER '61

MODERN TEXTILES

MAGAZINE

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story page 21

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MODERN

TEXTILES MAGAZINE*

December, 1961 Vol. 42, No. 12

Modern Textiles Magazine
Established 1925

* * *

Published Monthly by
Rayon Publishing Corporation
303 Fifth Ave., New York 16, N. Y.
MUrray Hill 4-0455

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Subscription Rates: North and South America and U. S. Possessions, one year $5.00; all other countries, one year, $8.00. Postage prepaid by the publisher. Single copies $1.00.

BPA

Member of
Business Publications Audit of Circulation, Inc.

Accepted as a controlled circulation publication at the Post Office, Manchester, N. H. Editorial and Circulation offices at 303 Fifth Avenue, New York 16, N. Y. Publication offices at 215 Canal Street, Manchester, N. H.

(Originally entered as second-class matter at the Post Office, New York, N. Y. August 20, 1925).

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AATT PAPERS

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The Principal Trade Groups

American Association of Textile Chemists and Colorists .... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technology, Inc. .... 100 W. 55th St., New York
American Cotton Manufacturers Institute, Inc. .... 1501 Johnston Bldg., Charlotte, N. C.
American Cotton Manufacturers Institute, Inc. Man-Made Fibers and Silk Division .... 10 East 40th St., New York
Man-Made Fiber Producers Association, Inc. .... 350 Fifth Ave., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. .... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association .... 41 E. 42nd St., New York
Textile Distributors Institute, Inc. .... 469 Seventh Ave., New York

Burlap Substitute Offered

Fulton Cotton Mills, Inc., is now producing "DurLap," a new replacement material for burlap which is said to be good for packaging and shipping uses. The new product, "a wood cellulose material," is said to have no lint, no odor, no grease or oils, is water repellent, is as strong as burlap, and has a more resilient knit construction, according to Fulton. The company reports the material is competitively priced. Initial marketing plans for DurLap will be concentrated on its suitability as knit tubing—for packaging and shipping—for textile mills, finishing plants and factories.

Chemstrand Buys Knitter

Chemstrand Corp. has purchased an interest in Blume Knitwear, Inc., manufacturer of "Helen Harper" sweaters and coordinates. Its newly-acquired interest provides Chemstrand with an opportunity to establish a framework within which to explore new techniques and new products in the sweater field.

More Titanium Dioxide

Du Pont will expand the output of titanium dioxide pigment at its New Johnsonville, Tenn., plant by 30% in the next 12 months. Construction of additional facilities at New Johnsonville is the first step in a planned program of major expansions at the plant. Du Pont also manufacturers the white pigment at its Baltimore, Md., and Edge Moor, Del., plants.

Name Advertising Agency

Wayne T. Stanford, general manager, Stanford Engineering Co., Salem, Ill., has announced appointment of Calvert Advertising Co., Inc., St. Louis, Mo., as its new advertising agency. Stanford designs and manufactures a complete line of web processing equipment for every web-fed operation involving textiles, paper, film, foil, plastics, rubber and other web materials.

An 8-page technical manual contains detailed information of the firm's "P-H" series automatic web guide. *For copies of the manual write the editors.*

Colker on New Job

David A. Colker, vice president in charge of sales for National Drying Machinery Co., Philadelphia, Pa., is on a leave-of-absence from the company to reorganize The Chemical Packaging Co. of Florida. In his absence, George J. Schillinger, Jr., will continue as sales manager and William Poole as manager of customer engineering services for National.

New Fiber-Forming Machine Now Available

A new fiber forming machine with a wide range of applications for determining the fiber–forming properties of all types of polymers has been developed by E. W. K. Schwarz Inc. Called the Schwarz Universal fiber former, it is adaptable for producing monofilaments and multifilament yarns in all denier sizes from small gram lots to pound quantities.

The machine is furnished with various spinning heads, including a horizontal type for wet or solution spinning, and a vertical type for dry or melt-spinning. A take-off unit provides for controlled stretching of the filaments, with or without added heat, while wet spun samples can be continuously dried. Yarns or monofilaments can also be taken off with no stretch. Pump and take-off speeds, and stretch rates, are continuously variable.

The wet spinning head consists of a dope reservoir, pump, filter, spinnerettes and coagulation bath, with all metal parts fabricated of stainless steel. The melt and dry spinning head consists of three parts: the pump system, the hydraulic cylinder and the extrusion cylinder. The temperature of the resin in the metal head is detected by a thermocouple and indicated and controlled to an accuracy of less than 1 degree C.

The take-off mechanism consists of two sets of three godet wheels each: the speed of each set is independently and continuously variable.

E. W. K. Schwarz Inc., on a contract basis, makes available the services of this equipment and its staff for evaluation of new polymers or for other fiber research. Short term, preliminary investigations are suggested for determining the desirability of longer term projects. *For further information write the editors.*

GOODYEAR

SAGNER SETS NEW STANDARDS IN SUITS

Spinco · Northcool Sagner Vycott · Vycron · Vitel

The Northcool suit was tailored by Sagner, of course.

The Vycott fabric (65% polyester – 35% combed cotton) was woven by Spinco Fabrics, Inc., and certified by U. S. Testing Co.

The Vycron polyester fiber was spun by Beaunit.

The Vitel polyester resin was produced by Goodyear.

And so a new standard in wash-and-wear suits is set. For these fine names have combined their skills to produce a garment that's unmatched in its smart color, luxurious texture and all-around performance.

VITEL makes this performance possible by imparting these properties to fibers: Exceptional yarn strength—good fiber-to-fiber cohesion—outstanding mill processability—unusual dyeability and colorfastness—excellent resistance to pilling and abrasion—ideal wash-and-wear properties. Further information on VITEL is yours by writing Goodyear, Chemical Division, Dept. F-9476, Akron 16, Ohio.

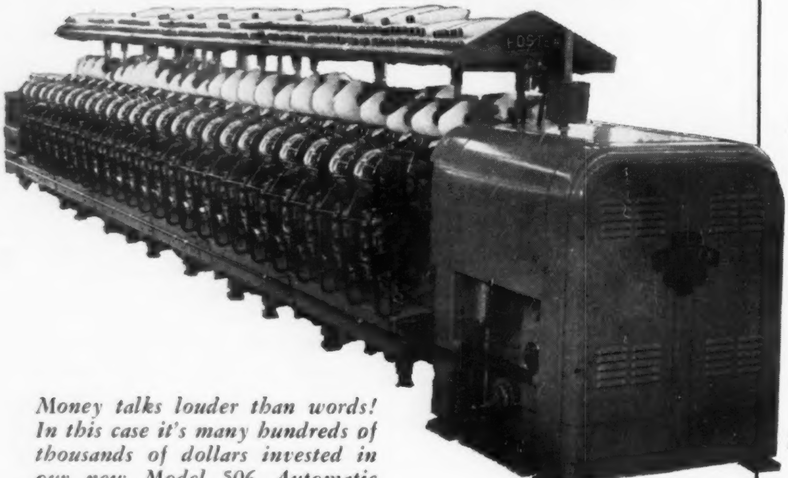
Lots of good things come from

GOODYEAR

CHEMICAL DIVISION

Northcool, Vycott–T. M.'s Sagner, Inc., Frederick, Md.
Vycron–T. M. Beaunit Mills, Inc., Fibers Division, New York, N. Y.
Vitel–T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

FOSTER 500 SERIES
AUTOMATIC CONE WINDER



Money talks louder than words! In this case it's many hundreds of thousands of dollars invested in our new Model 506 Automatic Winder by some of the most progressive mills in the country. We ask for no better endorsement. Do you?

Some of the mills who are now using it or have placed orders for it.

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Corriher Mills
Landis, N. C.

A. M. Smyre Manufacturing Co.
Ranlo, N. C.

Russell Manufacturing Co.
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Swift Spinning Mills
Columbus, Ga.

Flagg Utica Mills
Grantville, Ga.

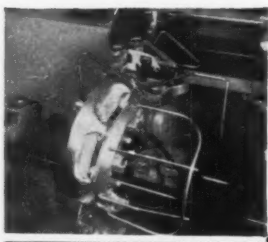
Spray Cotton Mills
Spray, N. C.

Firestone Synthetic Fibers Co.*
Hopewell, Va.

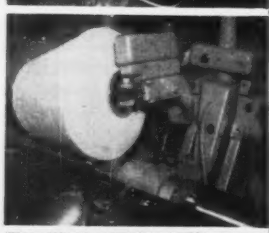
E. I. Dupont de Nemours & Co.*
Seaford, Md.

*These companies have ordered our Model 510 — another version of the 500 series.

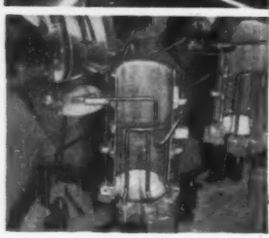
50% MORE PRODUCTION PER OPERATOR AT TWICE THE WINDING SPEED WITHOUT JEOPARDIZING YARN QUALITY –



ELECTRONIC TENSION AND SLUB CATCHER



AUTOMATIC SIZE STOP MECHANISM



AUTOMATIC SUPPLY BOBBIN EXCHANGER

— that's why these mills have ordered. They want more production at lower cost, but they cannot afford it at the expense of yarn quality. The Model 506 *protects* yarn quality because it does not attempt to tie knots automatically. The operator does it with a standard high speed knotter and has an opportunity to test the knot at the same time (taking a small fraction of a minute). Thus any chance of wild yarn, tangles, bobbin rings, crossed ends, uneven package density or rough yarn (which can occur with automatic knot tying) is eliminated.

AUTOMATION is confined to threading up, slubbing, cleaning, disposal of empty bobbins, gauging full cones, donning full bobbins and doffing empty bobbins. None of these operations can jeopardize yarn quality.

CONE QUALITY is even better than that of the Model 102 cone (standard for the sales yarn market for many years).

HAVE YOU INVESTIGATED our Model 506 Automatic Yarn Winder? If not, why delay? Send for our Model 506 brochure.

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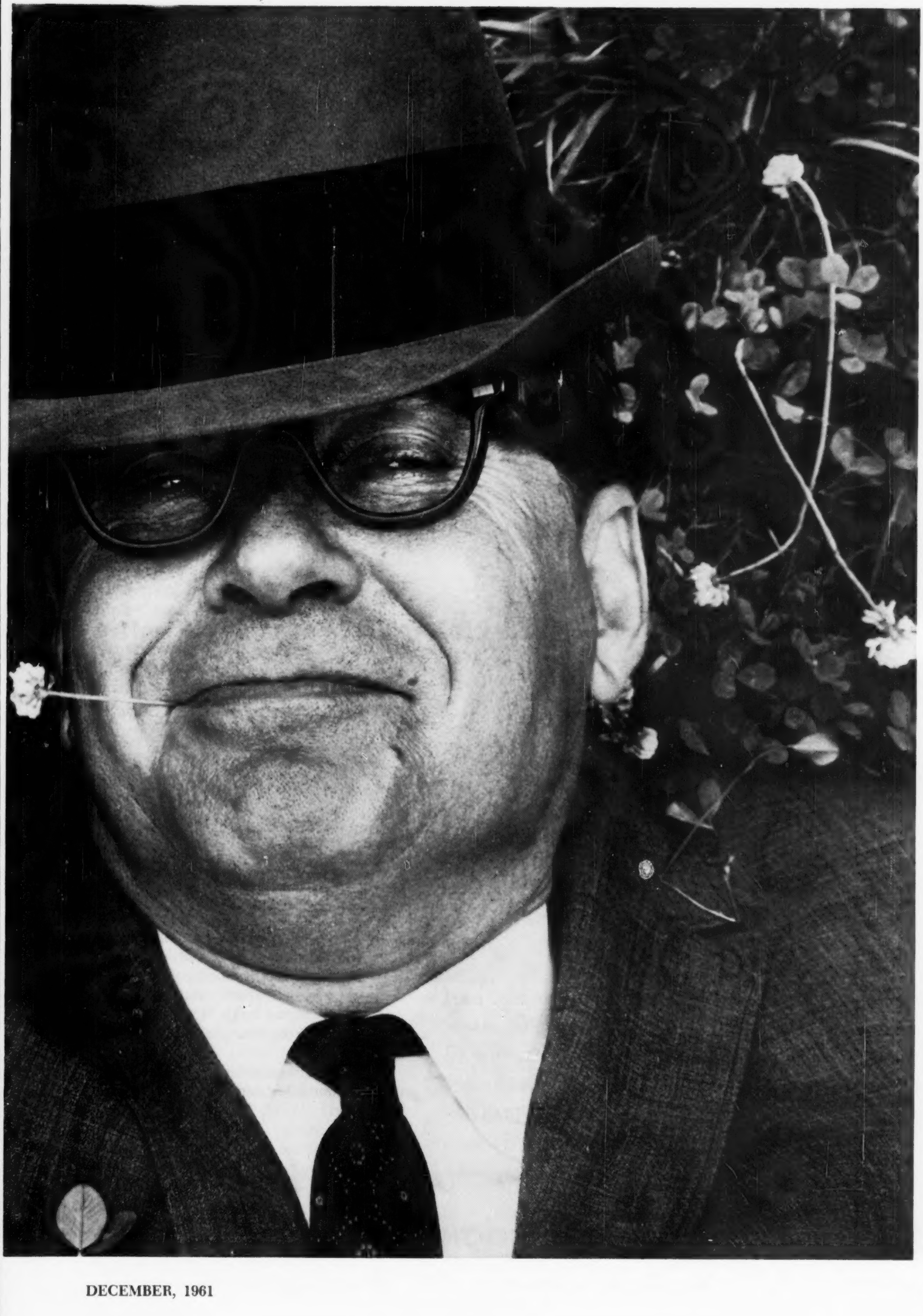


Dependability is built into Draper looms . . . part by part. Regardless of size, shape or location, each part is engineered and manufactured to precise tolerances. The Harness Cam Assembly illustrated above, is one reason why Draper has become the accepted name for quality and dependability throughout the textile industry.

DRAPER CORPORATION

HOPEDALE, MASS • ATLANTA, GA • GREENSBORO, N. C. • SPARTANBURG, S. C.

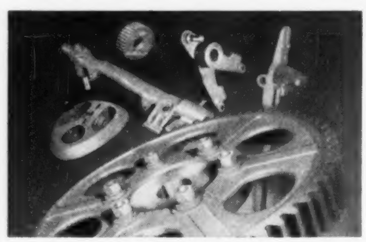
RETARDING LOOM OBSOLESCENCE

A steady flow of new Improved Repair Parts keeps mill weaving machinery up-to-date

Draper Corporation is continually improving parts and mechanisms for its looms. Year after year, scarcely a week passes without the introduction of another Improved Repair Part for one or more Draper loom models. These are all designed by Draper research and engineering staffs to keep present mill machinery competitive with our newest looms.

Each Draper Improved Repair Part is made for application to as many mill loom conditions as possible. Although they may be copied by others, the original design of these parts can be successfully accomplished only by the loom builder, for he alone has complete information on the various loom constructions in the field.

These Improved Repair Parts help to keep older looms operating profitably. They postpone the day when a mill must consider its looms to be obsolete.



What is an Improved Repair Part? An Improved Repair Part is one so developed by Draper engineers that is can be applied, as far as possible, to all existing Draper looms in the mills. It is designed to give one or more of the following benefits:

1. Better service throughout a longer life than the original loom part.
2. Easier installation with less down time.
3. Better loom operation.
4. Production of higher quality fabrics.

How Improved Repair Parts are developed. Ideas for Improved Repair Parts originate from Draper engineering and manufacturing de-

partments, Construction Committee members, Draper sales and service men, recommendations of material suppliers and, frequently, from suggestions by mill superintendents, overseers, and loom fixers.

Usually extensive "mill trials" are conducted, whereby a new part proves itself in actual weaveroom operation, before it is offered for sale.

Although Improved Repair Parts are designed to replace older parts, mills often use both old parts and new Improved Repair Parts simply because supply room bins and records are set up for ordering both. Generally the older number could be eliminated to advantage.

Why Draper Parts are best for Draper looms. Uniformity of parts is necessary for successful standardization in setting loom mechanisms to gauge. Worn or poorly fitting parts just cannot be set to gauge. Competitive mills know that only with the best loom parts available can they get uniform and accurate settings, that *only with gauged settings can they get maximum production, lowest weaving costs and highest cloth quality.* These mills are first putting their looms in top condition and then running them with correct and standardized settings.

In such a planned program, differences in initial cost of repair parts are often found to be of least importance. More and more mills are using Draper parts *exclusively* to maintain their weaving machinery at highest competitive standards. Draper parts are made from the same metal mixes as original parts furnished with the loom. They are finished to master overall gauge dimensions available only to the loom manufacturer. Draper Improved Repair Parts fit Draper looms and each other better; as a result, they are dependable and last longer. Correct engineering design, selection of proper materials and use of economical manufacturing methods are determined for each Draper part by a competent knowledge of their effect upon *total loom operation.*

You can find out more about Improved Repair Parts from your Draper Improved Repair Parts Catalog, from Draper sales and service representatives, or by writing to Draper Corporation.

Draper Link Type Parallel . . . provides a positive fully constrained action, contributing to smoother shuttle flight, improved boxing, simplified adjustment and longer life of Shuttle Box and Pick Motion parts.

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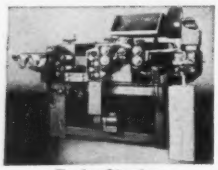
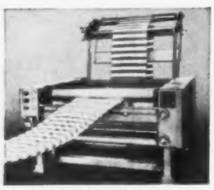

Turbo Stapler


Turbo Dye Boarder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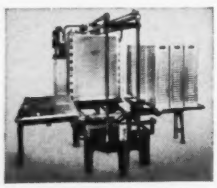
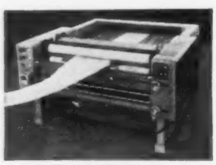

Turbo FS-300 Fiber Setter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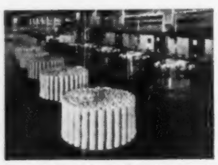
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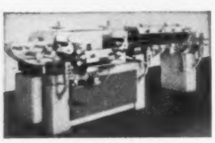
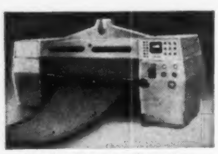

Turbo Tow Processing Machine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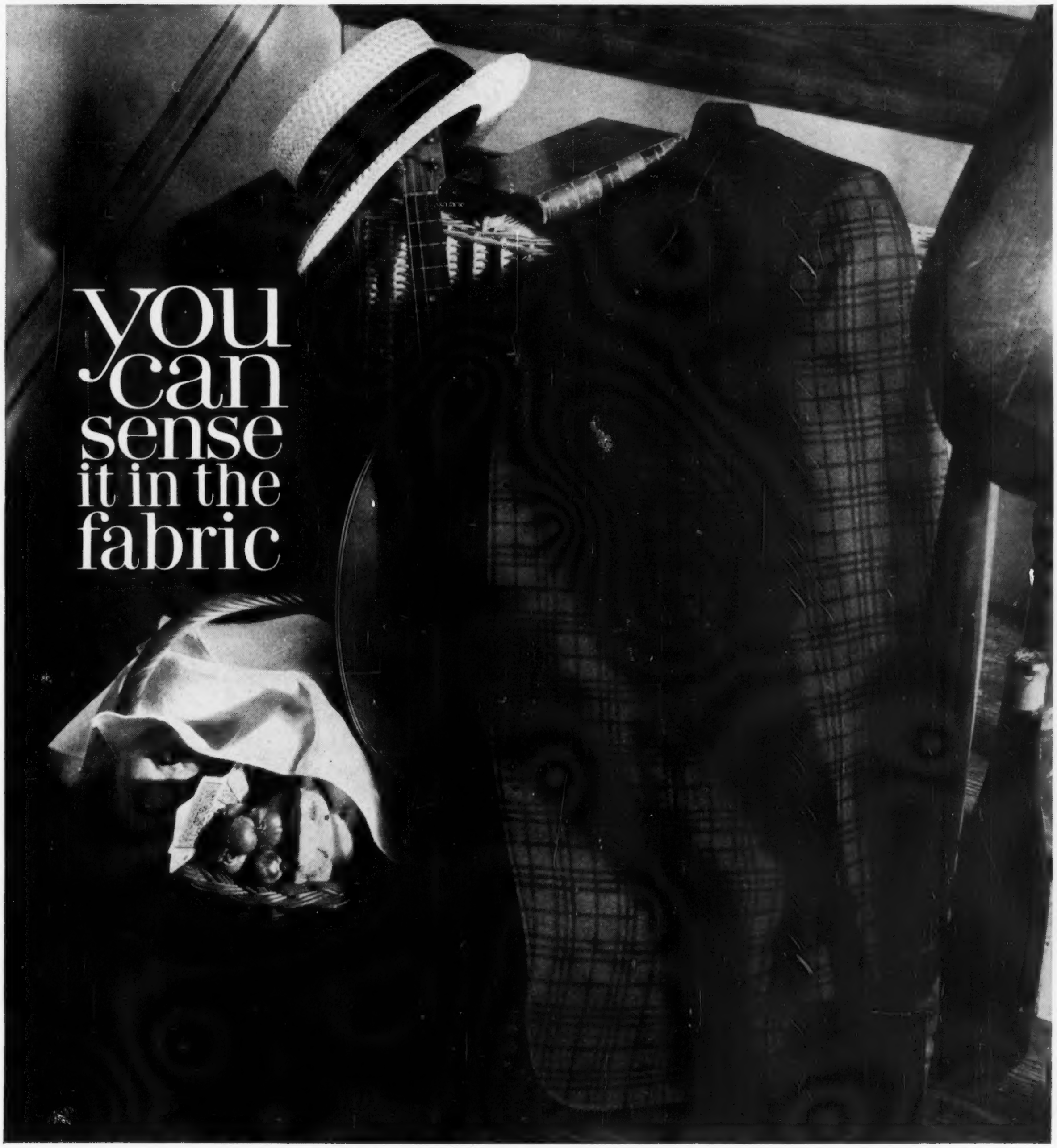

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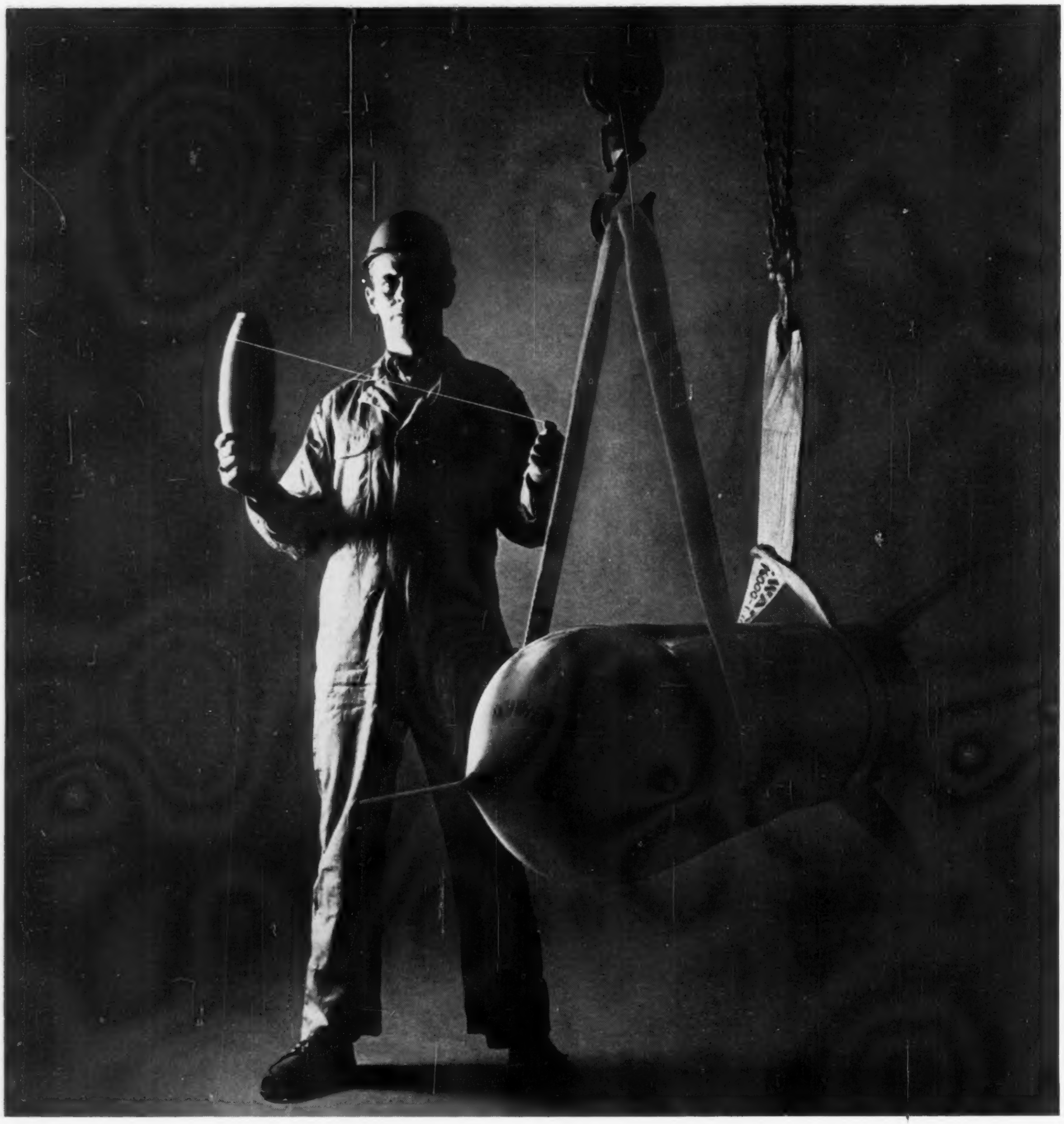


December '61

MODERN TEXTILES
Magazine

Publisher's Viewpoint

Let's Stop Paying This Ransom!

SELDOM HAS the textile industry and the American business community at large heard so forthright, so well-reasoned and so convincing an argument against crippling government interference than the speech on October 3rd by James E. Robison, president of Indian Head Mills.

Addressing the Textile Salesmen Association's annual luncheon in New York in a talk, aptly entitled "King Cotton's Ransom," Robison proved to the hilt, to our way of thinking, the great harm done American textiles by the Federal Government's cotton price support program. And even more importantly, he gave what we consider to be well-documented reasons for ending this unnecessary dole to marginal cotton farmers—a handout that inflicts an unjust burden not only on the textile industry, but all American taxpayers.

$3.8 Billion Wasted

The major point of Robison's rousing speech was that taxpayers and the textile industry have paid out directly during the past five years for "King Cotton's Ransom" some $3.8 billion without solving the problems that price supports were intended to solve. In his estimation, the textile industry alone will be called upon, in the current crop year, for a further "ransom" of $360 million. Elimination of this $360 million payment this year, he said, would go a long way toward solving our problems—including the import problem.

According to Robison's figures, which we feel are worthy of the most careful consideration, the "ransom" paid to maintain the cotton support program in the past five years breaks down as follows:

From the U.S. taxpayer $2.5 billion to finance price supports, acreage allotment and export programs, an average of $500 million per year.

From the textile industry $1.3 billion through the purchase of raw cotton at controlled prices above world market prices.

Robison drove home the telling point that competitive conditions have made it impossible to pass along all of the excess cotton costs to the consumer in the form of higher prices. He noted that the Department of Labor wholesale price index for cotton textiles stands today at 97% of the 1947 level. The textile industry's cotton "ransom" payment, he said, just about equalled profits from all textile mill products in the 1955-1960 period.

To bring home to his audience the devastating effect on our industry of the cotton price support program, Robison cited these points:

From 1947 to 1961, U.S. industrial production increased by 50% while textile production declined by 2%. During the same period, textile employment dropped from 1,325,000 to 940,000. Textile wage rates are below other manufacturing industries, amounting to about 70% of the average for all manufacturing. Profits on textile mill products are among the lowest of all major industries in the country, currently running around 2% of sales and 4% on stockholders' equity—less than half of the average for all manufacturing industries. Robison noted also that, with few exceptions, textile mill securities sell at substantial discounts from their book values.

Cotton Quality Deteriorates

Perhaps the most convincing argument made by Robison was the bad effect the cotton support price program has on the cotton farmers whom it is intended to help. He argued that American cotton has declined in quality because the government stands ready to buy it regardless of its quality. Consequently the American mills are receiving poorer cotton while American cotton is no longer the preferred fiber in foreign markets.

Furthermore, he reasoned, the bulk of our total cotton crop is produced by about 15% of our cotton farmers. "If allowed to raise cotton and sell it at free market prices, there is not the slightest question that they could supply all of this country's needs, and much of the world's on an economic and efficient basis. Moreover, they would give us a better quality

(Continued on Page 67)

TEXTILE NEWS
World Wide

COURTAULDS GETS SET to meet sharpening textile competition in Europe. The giant British company has offered to buy British Enka, the Dutch AKU subsidiary, for $5,250,000 as "a further step to rationalize our textile activities against the background of stripping for action in the Common Market," it was said. British Enka has a capacity of 25 million pounds of textile and industrial rayon yarn.

EUROPEANS ALSO GIRD for Common Market competition. Belgium's Fabelta, big man-made fiber producer, and Union Chimique Belge are due to be absorbed by Sidac, polyvinyl plastic makers. Then, according to trade reports, the recently merged Rhone-Poulenc-Celtex (France) group would take over Sidac. The Continental merger moves are said to be in part a reaction to U.S. textile expansion in Europe.

MONTECATINI LICENSES six Japanese firms to manufacture its "isotactic" polypropylene plastic and fiber, according to Managing Director Piero Giustiniani. Mitsubishi Petroleum, Mitsui Chemical and Sumitomo Chemical will make the polypropylene chiefly for plastics. Mitsubishi Rayon, Toyo Rayon and Toyo Spinning will make fiber.

JAPANESE, U.S. FIRMS are also making agreements. Tennessee Eastman would license Showa Denke to make polypropylene resin—in a new plant which should have a 10 ton per year capacity. And Von Kohorn International will provide technical assistance and equipment to Nippon Rayon to produce nylon six tire cord. The Japanese firm would construct a pilot plant.

RUSSIA MAPS VAST manmade fiber expansion. Premier Khrushchev told the 26th Communist Party Congress that Russia would invest more than $2 billion between now and 1980 to raise synthetic tire and plastic output by 60 times and manmade fiber production by 15 times. All types of textile output would total 22 billion square meters.

INDIA URGED TO BOOST its manmade fiber production. D. N. Shroff, president of the Silk and Art Silk Mills' Research Association suggested specifically that the country increase its capacity to produce rayon grade pulp as well as rayon filament and staple fiber.

BIG GERMAN PRODUCER forecasts major expansion in nytril fiber output in 1962. Farbwerke Hoechst said that its agreement with Celanese Corp. should spark output of Travis nytril fiber. Hoechst also expects chlorelectrolysis capacity to rise over 1961. The company will spend $100 million on capital expansion in 1962, the same as 1961.

DUPONT'S ARGENTINE affiliate, Ducilo, plans to double output of nylon yarn and to install new facilities to make nylon tire cord. Jorge L. Aguilar, president of Ducilo, which is owned 72% by Dupont, said construction would start immediately and both projects should be operating next year. Imports thereafter should be unnecessary, Senor Aguilar said.

WASH-WEAR SHIRTS NOW being made in Argentina by the Buenos Aires firm, Sudamtex Textil, a division of United Merchants and Manufacturers. The trade mark is Lavi-Listo. The shirts are made from Acrocel, an exclusive Sudamtex polyester fiber. The firm's Uruguay branch has been making the shirts for two years.

N. ZEALAND COTTON MILL construction gets underway. Commonwealth Fabric, a subsidiary of Britain's Smith & Nephew, says initial stage production in mid-1962 will be at an average annual sales volume of 1.5 million pounds sterling. When full-scale operations are reached in 1964, the returns should be 4.5 million. Denims, drills, cotton, wool, surgical dressings and diaper cloth will be made next year.

IMPROVED FILM EXTRUDER developed by Oerlikon Plastics, Zurich. Called Rotatruder, it is designed mainly to process polyethylene, polypropylene, polyamide and polyvinyl chloride. It can produce tubular foils without swellings and flat wind at high temperatures.

GATT COTTON MEET ENDS on inconclusive note. The 16 nations in the Cotton Textile Conference of the General Agreement on Tariffs and Trade, which met recently at Geneva, were unable to solve the problem of how low wage exporters could be helped without harming importing countries' industries. They will meet again Jan. 29.

How Stengel leads
MANHATTAN'S GROWTH

Shirts are no longer the only product of Manhattan Shirt Co. To its expanding variety of men's apparel, this big cutter has added a growing womenswear division. And there's more to come

By G. L. Solomon

AS A BUYER of fabrics and manufacturer of garments, Manhattan Shirt Company is big and important. Reflecting on his company's steady expansion and current prosperity, president Louis C. Stengel, Jr. says: "We have a larger part of the market today than we had in years past and we are going to get a still larger part in the future."

He reports that a record volume of $42 million is expected for the year January through December 1961. This is a rise of over $2 million from the $39.8 million scored for fiscal 1960 (June 1959-1960) and a $7.5 million increase since 1959's $34.5 million. (The company changed from a fiscal year to a calendar year in 1960).

These sales are made on varied men's furnishings and women's sportswear lines to which the company keeps adding new items. Indeed, current operations are a far cry from the $18,000 volume made in shirtings in 1857, the year Lewis Levi, aged 14, and his older brother Jacob, started in business in downtown New York City.

Explaining Manhattan's success in the post World War II era, Stengel says it is "because we have a good, hot, young fashion line and youth is a growing segment of our economy."

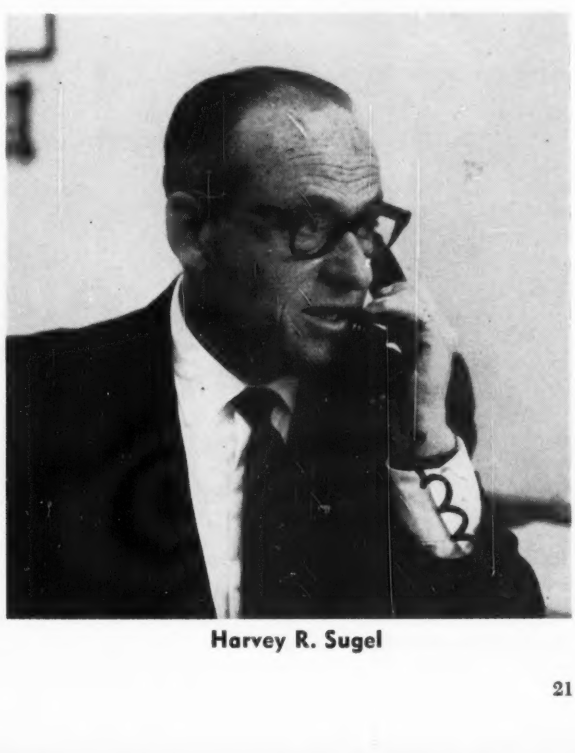
Youthful is an apt description of Manhattan in spite of the fact that it is more than a century old. It is flexible, imaginative, and open-minded about new ways of manufacturing and marketing as well as new technology, new fabrics and designs, and new style features.

At the firm's helm, inspiring its creativity and representing its youthfulness, is 46-year-old Stengel himself. Yet he is a company veteran with 31 years' service. At the age of 15, he took a part-time summer job as office boy in the shirt-making department of Manhattan's Paterson, New Jersey plant. And he stayed on, completing his education in night school.

Promotions from job to job, in every department of the company except credit, provided him with experience in all phases of merchandising. Some of the rungs he passed on the ladder upward, included: assistant sales manager; West Coast regional manager; general sales manager; vice president in charge of sales and advertising; senior vice president, and executive vice president. Another rung was button buyer at a time when all buttons used were pearl and shopping for them was a job of significance.

Considerably more than knowledge and experience, however, has pushed Stengel to the top. A keen sense

Robert L. Leeds, Jr.



Harvey R. Sugel

of merchandising and sales; an insight into consumer wants; a spirit of adventure and willingness to travel new roads; a warm outgoing personality, and an ample appreciation for the skill and intelligence of the men he works with—all these are in Stengel's make-up.

It is apparent, too, that Stengel's outstanding characteristics, business and personal, have matured by his long association with Manhattan. Throughout the company there is a happy spirit of mutual interest. This is one reason why so many people stay with Manhattan for long periods.

For example, in addition to Stengel with 30 years' tenure there is Robert L. Leeds, Jr., vice president and director of marketing and his cousin, Lawrence C. Leeds, vice president and manager of the International Division, who represent the fourth generation of the founding family active in the corporation. Among others with long tenure are Sylvan Geismar, chairman of the board, who joined the firm in 1907, and Harvey Sugel, vice president and director of merchandising, with more than 37 years' service.

The Manhattan brand name was established in 1895, when Levi, Wechsler and Co. became The Manhattan Shirt Co. Through the years, the firm has sought to equate this name with fashion and quality in medium-priced goods.

To perpetuate the Manhattan image of quality and fashion a great deal of talent, time and money are invested in product development. Manhattan's open-door policy to new ideas is so well known that chemical companies, mills, dyers, and converters, often request the company's cooperation in researching and improving innovations. As a rule, those who call for help get it. Bob Leeds put it this way: "We want new ideas and we want to work with all our suppliers on them. What we did working with Eastman, we can do with others."

STYLE IN THE MAKING—Rudolph Herklotz, Manhattan's art director, works on an original pattern for next season's line

THE FABRIC PLEASES—W. S. Woodson, Jr., Manhattan's director of research (left) and H. B. Martin, manager of the textile department, look with approval on a new Dacron-cotton shirt fabric

He was referring to the development of Kodel-cotton blends, which had initial success in Manhattan's Delcot shirts and are gaining popularity in other garments. In 1956, two years before Eastman launched its polyester, it approached Manhattan for help in developing Kodel-cotton blends in batiste and broadcloth. Testing, changing and retesting were carried on until a blend was achieved that met Manhattan's high standards of performance, hand and appearance. Additional experimentation at the mill, with the cooperation of Wellington Sears, culminated in the spring 1959 retailing of Delcot, a wash-and-wear dress shirt selling for $5.95. Immediate consumer acceptance of the shirt has stimulated the marketing of Delcot sport shirts, pajamas and underwear.

Manhattan's work on the Kodel project typifies its long tradition of innovation. In the 1870's it introduced a comfortable summer shirt without a heavily starched dickey bosom. In the 1890's it brought out a summer shirt of madras which has a breast pocket and a button-down attached collar, the first departure from the existing fashion of separate collars and cuffs.

Since the close of World War II, Manhattan has pioneered no-iron fabrics. It developed the first men's shirt of nylon that did not look and feel like women's lingerie; developed Dacron suitable for shirts, pajamas and underwear; introduced filament Orlon for dress shirts; and was the first to offer a branded line of men's shirts of Dacron-cotton.

Going full circle from the first laundered shirt to the almost permanently laundered shirt, Manhattan is now featuring the "Spinsmooth Plus with W-A-4," an all-cotton garment with Belfast self-ironing finish. Selling at the popular retail of $5, it has turned out to be the firm's biggest shirt item for fall 1961.

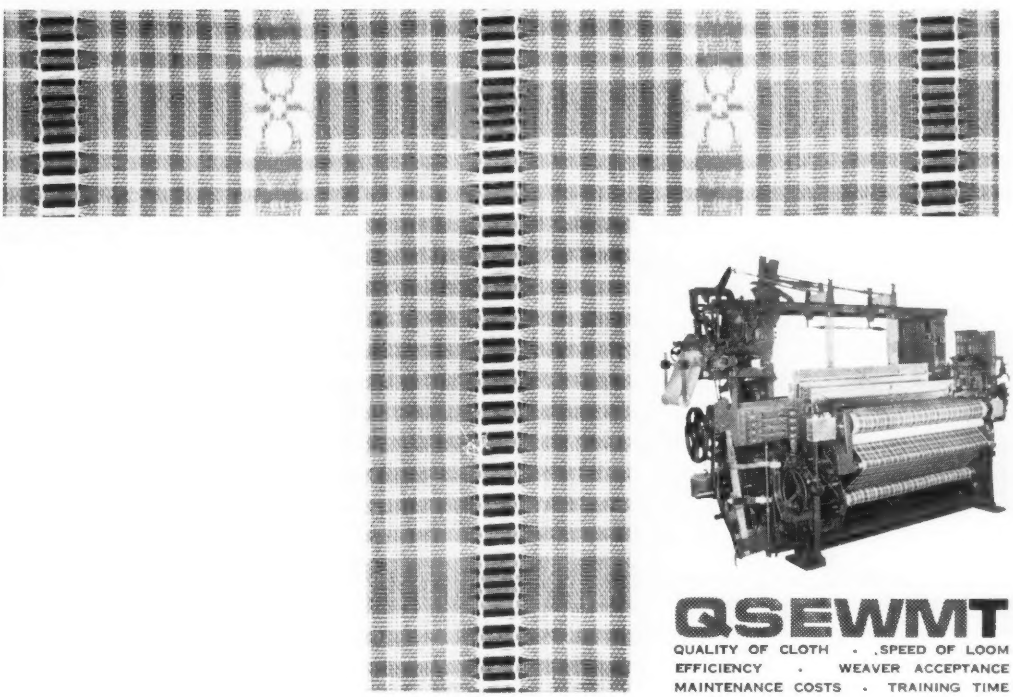
Incidentally, Manhattan, as far as it can ascertain, believes that currently no-iron fabrics account for

(Continued on Page 71)

TRAINING TIME for C&K's C-7 Loom is measurably shortened by the substitution of mechanical advantages for weavers' skills. Improvements engineered into the loom, such as electric controls, automatically do much of the thinking for the operator, and a sense of timing is not as essential.

Reduced skill requirements not only release trainees to work sooner but also enable more women to become weavers. Even inexperienced weavers can operate the loom safely at high speeds without difficulty. The resultant benefits are quicker proficiency and an increase in *average* workers' productivity.

The C-7 Loom is designed to produce more first quality cloth at higher efficiency and with less maintenance and labor costs. Crompton & Knowles has prepared a folder exploring each of the elements in this series. Send for it to see why the loom line that weaves the widest variety of fabrics ever—fancy cottons, synthetics, terry towels, ginghams, and dress goods—has big *advantages for your mill.*



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EFFICIENCY · WEAVER ACCEPTANCE
MAINTENANCE COSTS · TRAINING TIME

CROMPTON & KNOWLES CORPORATION

WORCESTER, MASSACHUSETTS

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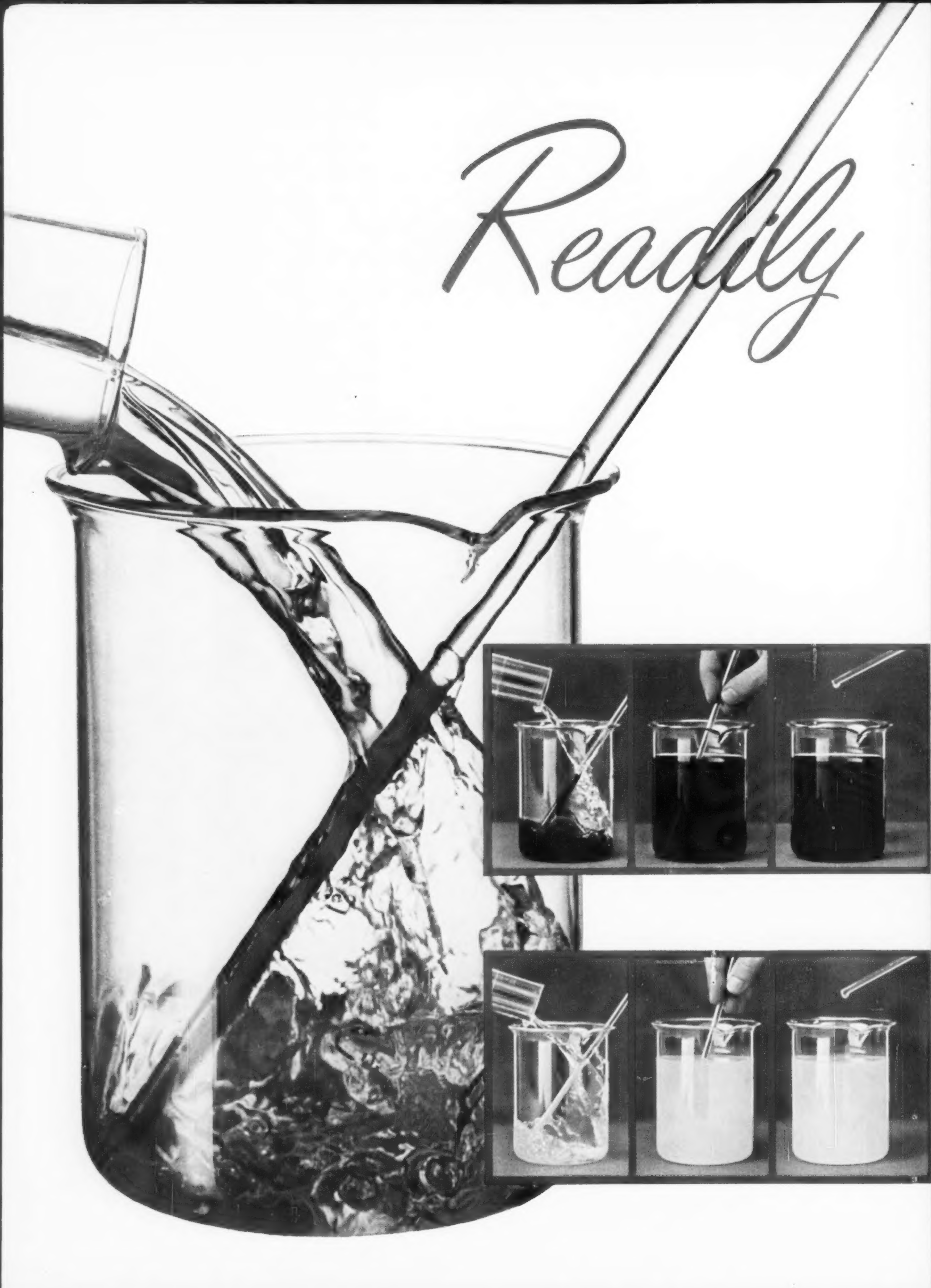

Readily

Some pointers for cutting

WOVEN STRETCH FABRICS

by R. A. Barth & R. H. Myers
THE DU PONT CO.

DU PONT'S TEXTILE FIBERS Department has developed some helpful suggestions for fabrication of apparel of woven stretch fabrics. These suggestions are offered for the guidance of cutters in handling both warp stretch and filling stretch fabrics, and are believed to represent the best information currently available.

Woven stretch fabrics should be spread for cutting in as nearly a tension-free state as possible with the height of the lay kept as low as practical. Special care should be taken with warp stretch fabrics to avoid stretching during the laying-up operation; where possible, it is desirable to allow the lay to relax before cutting.

Cutting stretch fabrics should present no unusual problems. As in cutting any fabric, quality is dependent on the condition of the cutting knife. Operators should check and sharpen the knife edge frequently to avoid pulled yarns and the possibility of fused edges.

In sewing woven stretch fabrics, it is important to keep in mind that the seams should be compatible with the fabric. For best results, seams sewn in the stretch direction should be able to elongate with the fabric without failure (see Figure I). Seams which lack extensibility, and thus fail before the natural "stretch" of the fabric is reached (Figure II) will give customer dissatisfaction. In some styles, to insure better garment fit, the use of seam tapes may be helpful to control stretch in certain areas.

Either the "chain stitch" (Type 401) or the lockstitch (Type 301) can be used with stretch fabrics. Seams sewn with the chain stitch have greater extensibility, because of the inherent elastic nature of this type of stitch. When using the chain stitch, satisfactory results can be obtained with any type of good quality thread of adequate size, provided a sufficient number of stitches per inch are used. With fabrics having 30% to 35% stretch, a minimum of 14 to 15 stitches per inch, as measured in the unstretched garment, is suggested. Threads of nylon or Dacron polyester fiber, because of their elasticity and high strength, offer a significant margin of safety.

Although seams sewn with the lockstitch lack extensibility, they can be made suitable for stretch fabrics by using thread of nylon or Dacron and an adequate number of stitches per inch. Good results have been obtained with fabrics having 30% to 35% stretch using a size 23 thread of Dacron or nylon, size 14 needle (Singer or equivalent) and 14 to 15 stitches per inch. Use of Dacron or nylon thread is strongly recommended with the lockstitch because conventional threads lack the necessary elasticity.

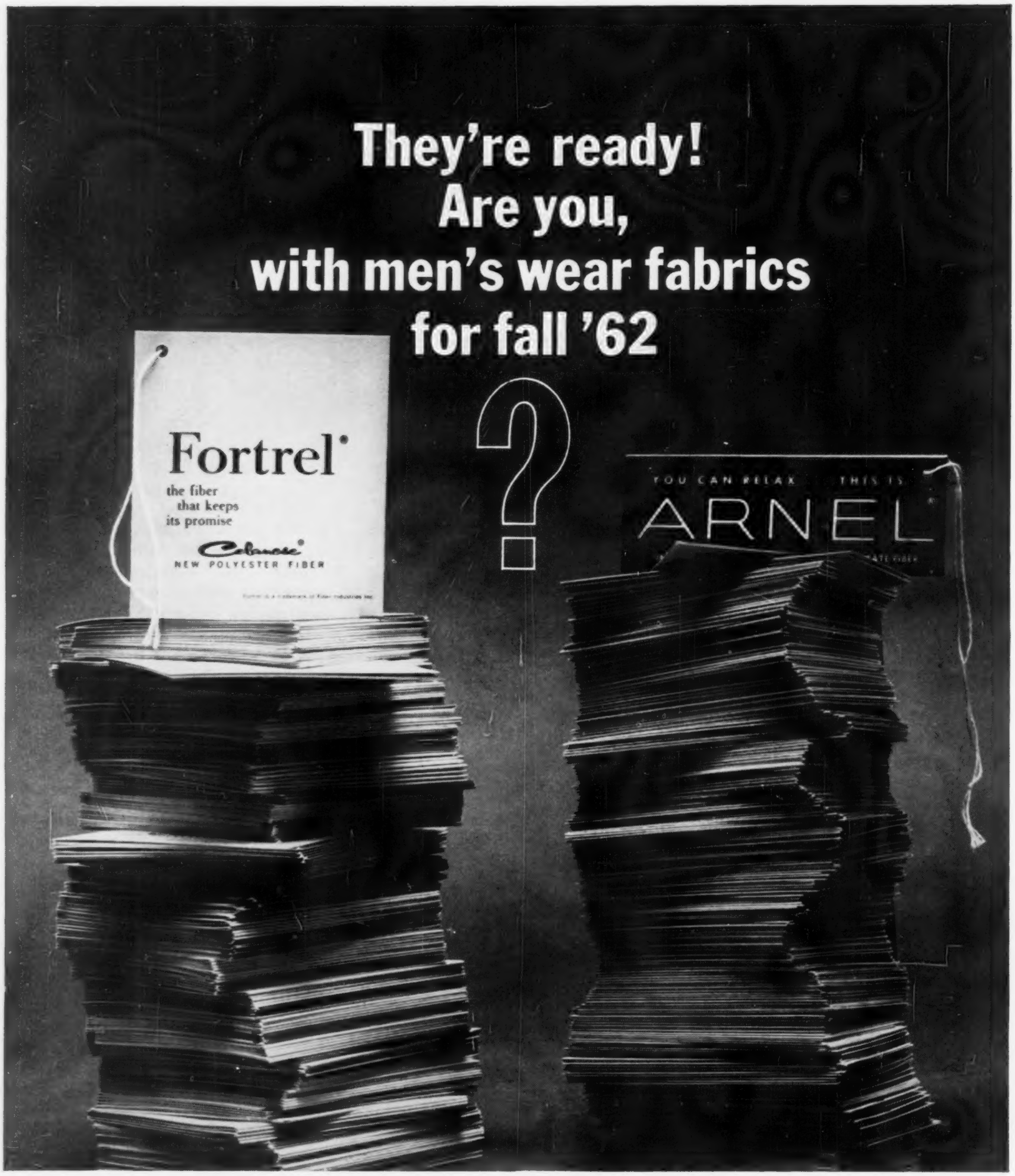
Regardless of stitch type employed, minimum thread tensions, consistent with good seam appearance, should be used during the sewing operation to insure maximum extensibility of the resulting seam. For the same reason, it is important that a balanced stitch always be used. The extensibility of the seam can also be increased by using a higher number of stitches per inch.

In sewing stretch fabrics, it is advisable to loosen the presser foot spring to the minimum level consistent with good sewing performance. Use of too much pressure on the presser foot may cause excessive drag on the top fabric and non-uniform results. Conventional feeding methods have been found satisfactory in sewing woven stretch fabrics.

(DuPont has just issued Technical Information Bulletin #N-145, on the above subject. It is available by writing to Technical Service Section, Textile Fibers Dept., DuPont Co., Centre Road Bldg., Wilmington 98, Del.)

FIGURE ONE shows properly seamed slacks of woven stretch fabric, stretched 30%. (The bench mark, originally at ten inches, has moved to 13 inches.) Note there is no evidence of seam failure.

FIGURE TWO shows improperly seamed slacks of woven stretch fabric, stretched 30%. (As in Figure One, the bench mark, originally at ten inches, has moved to 13 inches.) Note broken ends of thread in seam which has failed.



With your menswear customers—and their customers—these hang-tags are unmistakable symbols of outstanding quality. Converters, cutters and consumers alike have learned that *Fortrel polyester* and *Arnel triacetate* are positive assurance of lasting good looks with easy care. They bank on these famous Celanese fibers for minimum wrinkles and muss, maximum crease-retention—plus the simplest sort of upkeep.

This broad acceptance is no accident. Celanese backs these great fibers with great promotions. Powerful national advertising—together with all-out merchandising aid—constantly keep Fortrel and Arnel in the public eye. Retailers will be looking for Fortrel and Arnel tagged merchandise next fall . . . be sure these important fibers are in your lines! Celanese Fibers Co., 522 Fifth Avenue, N. Y. 36 (a division of Celanese Corporation of America).

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Celanese contemporary fibers


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Nearly 500,000 spindles of Model N Spinning for cotton and blends have been sold in just two years. Such rapid success can mean only one thing — that mill men see in it just what they need — a functional, high-value, low-cost frame that's lean, trim and versatile. Compact in design and price, it will repay you with years of outstanding performance and efficient production.
If out-dated, non-competitive spinning is whittling down your profits, now's the time to make your move. Call your Whitin representative today.
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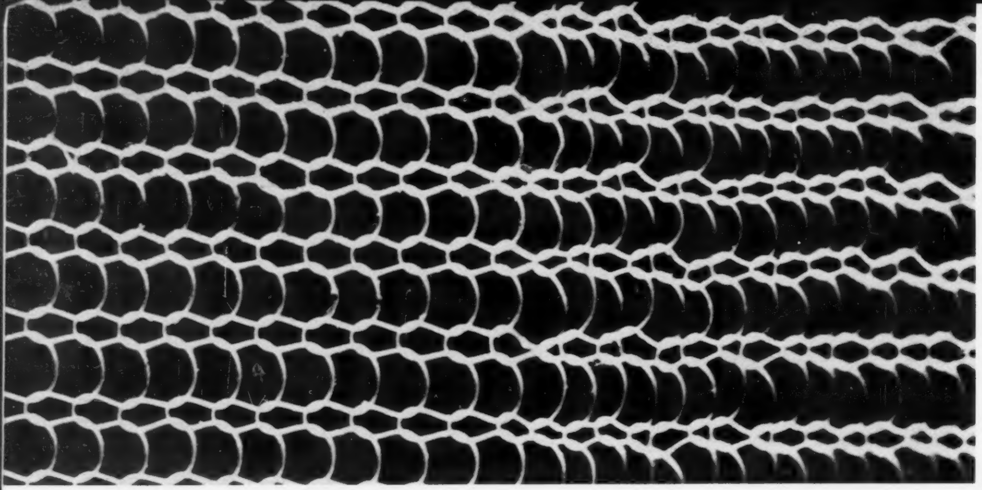
The best way to better yarns



NOTE CONTRAST — Right side of photo shows conventional seamless hosiery knitting. Left side shows improved stitch formation with new Tru-Tex attachment

How to get more uniform seamless stitches

A NEW IMPROVED VERSION of the Hemphill "Tru-Tex" attachment for getting better uniformity in stitch formation when knitting ladies seamless hosiery is now available from the Hemphill Banner Division of the Wildman Jacquard Co.

The attachment tends to evenly distribute the yarn tensions over the entire fabric and does not require pre-conditioning or pre-treating of yarn or special yarn-tension compensators. The regular attachment has proved extremely popular in many leading hosiery mills, but the improved version is reported to be much better and the changeover can be accomplished at small cost by inserting new cams and controls.

The "Tru-Tex" attachment is adaptable to leading makes of ladies seamless hosiery machines such as Scott & Williams, Fidelity, Bentley, Boonton and it can be applied to virtually all other makes such as Santoni, Lonati, Brixia, Chell, Stibbe, etc.

Mills using the attachment have reported, among other advantages, an improvement in dyeing in that the more even stitches cut down on streakiness, particularly in the darker shades.

The attachment consists mainly of a sinker cap equipped with special sinkers. The action of these sinkers is accurately controlled by a series of cams located in the sinker cap at each feed. The balance of levers, rods and mechanisms are for the purpose of coordinating the sinker cap movements to the motion of the machine through the action of the timing cam.

When knitting hosiery in the conventional manner the sinker moves forward and presses on the sinker wale as the needle is forming the stitch. Under this condition, it is pointed out, the evenness of the stitch depends on two variables, first, the accuracy of positioning and the timing of the sinker and secondly, the accuracy and timing of the needle movement.

When knitting with the new attachment, it is reported that an accurate control of the special sinker is assured by an enclosed sinker cam race located in the sinker cap. This sinker cam race acts on the sinker butt and accurately controls both the outward and inward motion of the sinkers.

By this means, three objectives are obtained. First, the special sinkers are consistent in their movements, neither overthrowing nor undershooting their settings. Second, the stitch can be accurately measured over the back of the sinker, influenced only by the needle action. And third, the sinking action is accomplished by pressing on a sinker wale that is already formed as compared to the conventional method of knitting where the sinker presses on a sinker wale that is in the process of being formed. The evenness of stitch is also said to ease the problems of sizing.

New AATT Members

A group of new members has been admitted to the American Association for Textile Technology, according to an announcement by Kurt J. Winter, president.

Admitted as regular members to the New York Chapter were the following: Sidney D. Blue, Reeves Bros.; Ivan Bollinger, Chemstrand Corp.; Sperry Ehlers, Filtration Fabrics Division, American Machine & Metals Inc.; Joseph A. Garofalo, Better Fabrics Testing Bureau; Joseph R. Jacques, Buckley & Mann, Inc.; Jules Lavner, Waumbec Mills; Charles E. Llewellyn, Filtration Fabrics Division, American Machine & Metals Inc.; Leonard Lubreski, J. P. Stevens & Co.; Robert McCormack, Bay City Mills; John P. McGivney, J. P. Stevens & Co.; Jack H. Ross, USAF; Saverio E. Russo, Laurel Mills; Joseph W. Schappel, American Viscose Corp.; Preston S. Schwarz, Continella Textile Corp.; Jacques Sebeo, Lonsdale Mills; John N. Soler, Muncy Fabrics; Melvin Wiener, Singer Mfg. Co.; (Mrs.) Toby J. Hodes, McCrory-McLellan & Green Stores; Helen O'Loughlin, Wellington Sears; Tibor J. Waldman, Tibor J. Waldman Inc.

Admitted to the New York Chapter as a junior member was Walter J. Wordell, Celanese Corp.

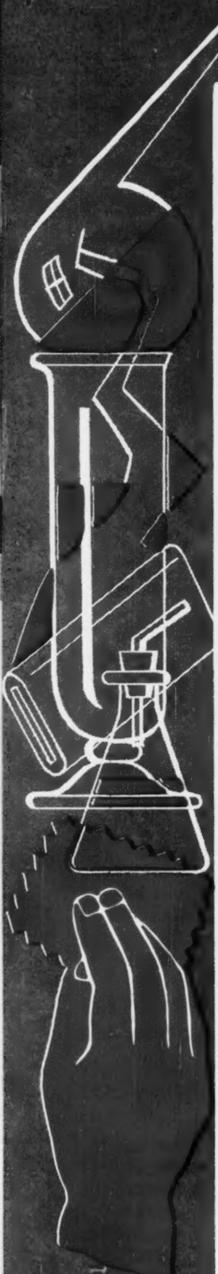
New Appalachian Chapter regular members were Gordon T. Helme and Charles B. Mather, Tennessee Eastman Corp.

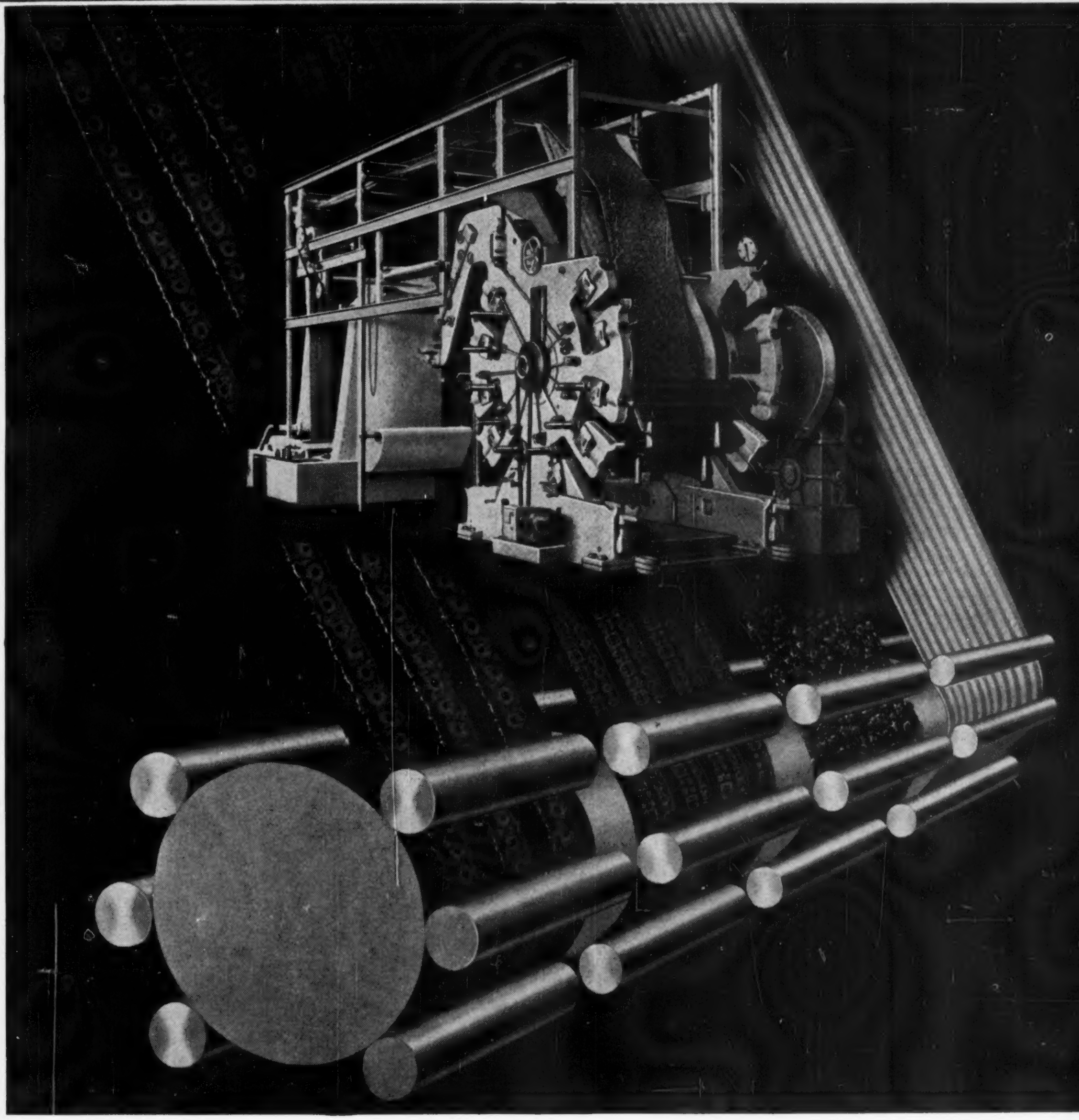
New Piedmont Chapter regular members were Walter V. Walukewicz, Excelsior Finishing Plant; Stephen Y. H. Yang, American Cyanamid Co.

Egan Doubles Facilities

Frank W. Egan & Co., Somerville, N. J., has completed a $350,000 expansion program, doubling its plant facilities. The firm manufactures machinery and equipment for textile finishing, plastics processing and other uses.

DYEING and FINISHING SECTION





BLEACHING
PRINTING
SPECIAL
PROCESSING

DYEING & FINISHING *newsbriefs*

Polyester Disperse Dyes

Sandoz, Inc., has released four new disperse dyes in the Foron line. All are suitable for use on polyester fibers, and are said to be superior in fastness to any available dyes similar in shade.

The four Foron colors are: Red FL ultra-dispersed; Rubine GFL ultra-dispersed; Scarlet BWFL ultra-dispersed p.a.f., and Yellow Brown 2RFL ultra-dispersed. *For further information write the editors.*

Nopco Chemical Bulletin

A four-page bulletin (No. ISP-50) containing a condensed listing of the more important processing chemicals available from Nopco Chemical Co.'s Industrial Division, is now being distributed. The bulletin includes surfactants, hydrosulfites and sulfoxylates, defoamers, resin and wax emulsions, water-soluble lubricants, water-soluble resins, softeners, and gas-fading inhibitors. *For free copies write the editors.*

New Fancourt Finish

High degrees of delustering and flexibility are said to be the prime properties of a newly-developed finish now available for textile industry use by the W.F. Fancourt Co. Called Liq-Dull 63, the new finishing agent has an unusual leveling ability, along with delustering, and provides flexible body with an even drape. It is available for woven or knit fabrics, natural or synthetic fibers, and can be applied to both bleached and dyed goods. *For further information write the editors.*

Leveling Agents

A manual on the most effective use of leveling agents in vat dyeing is being offered by Sou-Tex Chemical Co. The booklet contains 14 graphs and tables which cover the many applications of caustic soda, hydrosulfite, and salt-additions in vat dyeings. *For copies of the manual write the editors.*

Polypropylene Brightener

A fluorescent brightener has been developed which will substantially brighten polypropylene, a polyolefin polymer which has proved extremely difficult to dye until now, according to General Dyestuff Co. The new brightener, Blancophor MO-89, may be applied onto the finished fiber or introduced into the melt. This, as well as Blancophor AM-80, which is designed for use with acrylics, are available from the division.

The significance of the polypropylene brightener lies in the fact that this polyolefin normally yellows readily on exposure to sunlight and UV radiation. The new brightener, a white fluorescent dyestuff, optically masks this undesirable effect, opening new consumer uses for polypropylene fibers, filaments, and films. *For further information write the editors.*

Crosslinking Latex

The Resin Division of National Starch and Chemical Corp. has issued a technical brochure describing its recently-introduced self-reacting crosslinking resin latex, X-Link 2833. The brochure gives prospective industrial users general information and data on properties, formulation and applications of the new vinyl-acrylic copolymer dispersion, which is capable of crosslinking without the addition of thermosetting resins. *For copies of the brochure write the editors.*

Cotton Chemical Finishing

The National Cotton Council has issued a 104-page booklet which contains analyses of a number of promising developments in the chemical finishing of cotton fabrics. The research reports were originally presented at the Council-sponsored 9th Chemical Finishing Conference. Reprints of the papers may be obtained from the Council, Room 502, Ring Building, 1200—18th St., N.W., Washington, D. C.

New Weighter Finish

Rexobond 46, a new weighter finish with non-slip properties, has been developed by Emkay Chemical Co. The new product is highly active in liquid form. It is said to disperse readily and is compatible with dye fixing agents, resins and water repellents. When used with water repellents of the semi-durable type, spray ratings are maintained with greatly improved hand.

All-Purpose Tints

Deering Milliken Research Corp. has developed a new all-purpose line of fugitive tints designed for use on synthetic and natural fibers. Patent applications have been made, and licensing agreements for the manufacture and sale of these tints have been completed. One of the firms marketing them will be Syn-Chem Corp., Spartanburg, S. C.

Polyester Carrier Dyeing

If carrier compounds are to fulfill their purpose of increasing the rate of dye absorption when dyeing polyester fibers by the carrier method, uniform heat-setting temperatures must be used. This theory was set forth in a paper read by R. J. Thomas, at the February meeting of the Metropolitan Section of the American Association of Textile Chemists & Colorists. Thomas, along with D. P. Hallada and M. C. Keen, co-authors of the paper, are all three with the Technical Laboratory of the Oraganic Chemicals Department of Du Pont. Tests conducted on Dacron polyester fibers with both disperse and cationic dyes show the need for uniform heat-setting temperatures, the paper pointed out.

New Wash-Wear Finish

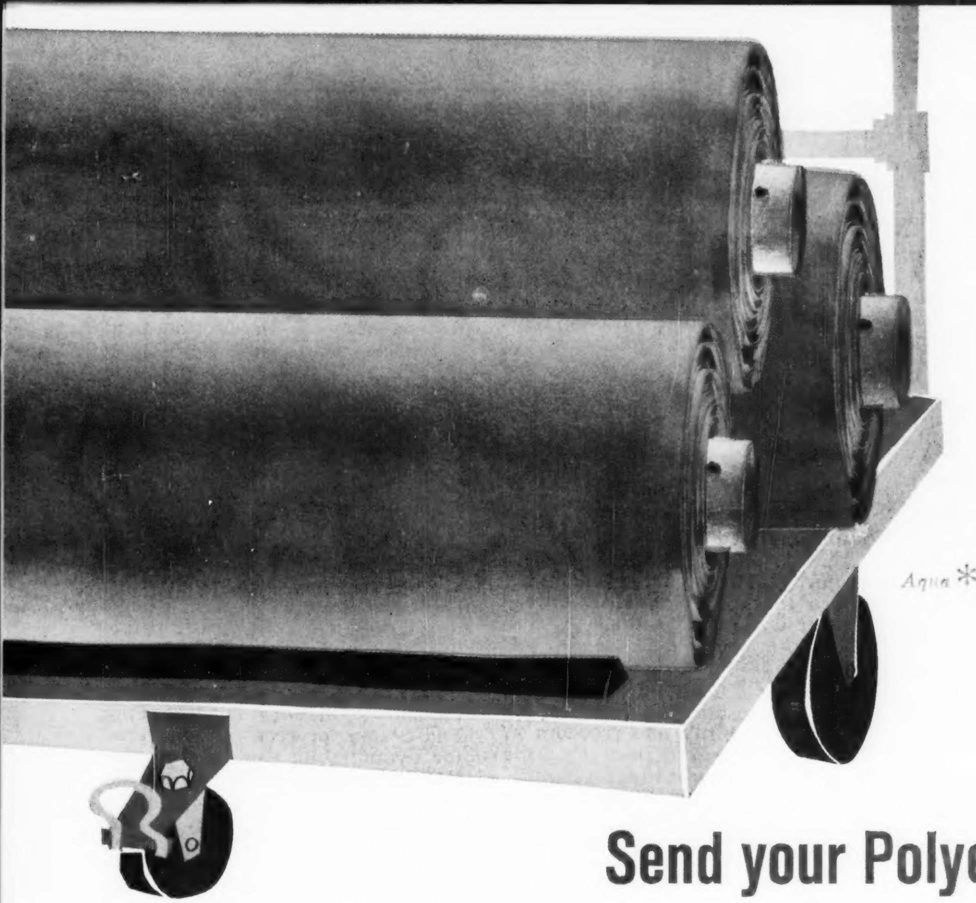
Pepperell Manufacturing Co. and Courtaulds (Alabama) Inc. have jointly developed a new wash-wear finish for cotton goods. Pepperell is the first licensee on cotton goods to market the trademarked Prestwick finish. It is available to the converting trade, as well as on a complete line of Pepperell cotton fabrics. Said to last the lifetime of the fabric, the permanent, non-resin finish is reported to have been proven on millions of yards of goods. In addition to being permanent, the finish is said to stabilize the fabric against progressive shrinkage, even when the fabric is tumbled-dried. *For further information write the editors.*

Improved Fabric Weighter

Eastern Color & Chemical Co. is marketing Ecco Weighter OVD, a water-soluble, granular solid which is completely compatible with softeners, finishing oils and most other auxiliaries. The new product is said to impart fullness of body and weight to cotton and synthetic fabrics with a minimum effect on shades of colored fabrics and with a moderate amount of stiffening. *For further information write the editors.*

Surfactants Data Sheets

Continental Chemical Co. is distributing data sheets which contain suggested starting formulations for compounds used in the sanitary chemical, soap, cosmetic, metal-treating, oil drilling, dyestuff, textile processing, and maintenance chemical industries. *For further information write the editors.*



Send your Polyester Fabrics to market protected by the Outstanding Fastness of Eastman Polyester Dyes

Your Eastman representative will be glad to tell you about the performance advantages and economy of these dyes

Light shades, dark shades—as the demand for fabrics containing polyester fibers continues to grow, dyers are being called upon to deliver more shades, brighter shades, faster shades.

In step with this trend, Eastman offers an expanding series of polyester dyes, providing the best all 'round fastness characteristics of polyester dyes currently available.

Specifically developed for use with polyester fibers, these dyes exhibit outstanding fastness to washing, light, sublimation, crocking, perspiration, dry cleaning and wet pressing.

Equally important are their excellent processing characteristics... good build-up, good exhaustion and outstanding leveling properties.

Dyeing with Eastman Polyester Dyes is easily accomplished with carriers or under pressure at elevated temperatures. Fibers can be readily dyed as tow, tops, stock, or fabric. Fabrics of polyester filament can be conveniently dyed in jigs. Fabrics woven of spun polyester yarns alone or blended with cotton, viscose or wool can be easily dyed in dye-becks.

Get the full story of this outstanding line of dyes for polyester fabrics from your Eastman representative. Formulations and technical assistance on dyeing procedures are readily available.

Eastman Polyester Dyes

Eastman Polyester Dyes are sold in the United States by **EASTMAN CHEMICAL PRODUCTS, INC.,** subsidiary of EASTMAN KODAK COMPANY, in Kingsport, Tennessee; Lodi, New Jersey; and Greensboro, North Carolina. On the **West Coast** through WILSON & GEO. MEYER & COMPANY, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City. In **Canada** through CLOUGH DYESTUFF CO., LTD., St. Laurent, P. Q.

*Try this formula on your next lot of aqua.
0.15% Eastman Polyester Yellow W
0.2% Eastman Polyester Blue GLF
3 g./l. of a suitable carrier
Material: Polyester
Bath Ratio: 30:1
Dyed 1 hour at boil

Polyester Yellow 5GLS
Polyester Yellow RL
Polyester Yellow W
Polyester Yellow 5R
Polyester Red B
Polyester Red 2G
Polyester Dark Red FL
Polyester Pink RL
Polyester Pink LB
Polyester Brilliant Orange 2RL
Polyester Blue GLF
Polyester Blue GR
Polyester Brilliant Blue 2RL
Polyester Blue 3RL
Polyester Blue BLF
Polyester Blue GB
Polyester Navy G
Polyester Violet R
Polyester Brown 3RL
Polyester Black RB
Polyester Diazo Black B

DYEING & FINISHING *newsbriefs*

Liquid Softeners

Tennessee Corp. is offering two new liquid softeners—Tennesoft 23-59 and Tennesoft 29-73—for cotton and cotton blended fabrics. Neither product requires predissolving or heating, and both are recommended for finishing terry or huck toweling, sheetings, diapers and knitted cotton fabrics. *For further information write the editors.*

New Ciba Jet Black

Ciba Co., has introduced a new jet black, Cibanone Black MBA double paste. Said to have good fastness and outstanding value, the double paste is highly effective in dyeing black shades on cotton yarns. It is particularly suited to the knitting, weaving and sewing trades, and may be applied by either the pigment or reduced methods. *For further information write the editors.*

Retarding Agent

Only Chemical Corp. has placed on the market a new retarding and leveling agent—Levelol 74—to produce level dyeings on wool and wool blends. The agent contains X-63, a chemical developed and available only from Onyx. *For further information write the editors.*

Synthetic Rubber Latices

Pliolite 440 and Pliolite 460, two new butadiene-styrene synthetic rubber latices designed for textile and paper applications, have been developed by Goodyear Tire & Rubber Co. The new materials are recommended for textile and carpet backings, binders for nonwoven fabrics, scrim adhesives for carpets, and for saturating and coating applications with papers. Both latices are characterized by low viscosity and are modified with chemicals known as carboxylics to provide better overall physical properties and faster, more economical curing. They also contain an antioxidant for better aging qualities. *For further information write the editors.*

New Thermosetting Resin

Hylite, a new thermosetting resin, is now being offered by Proctor Chemical Co. The product enables the finisher to produce good crease resistance of wash-and-wear effects without harming the light fastness of most classes of dyestuffs. *For further information write the editors.*

New Silicone Waterproofing

Weather-Cote—a new silicone liquid that waterproofs shoes, leather and certain types of fabric goods—has been introduced by The Goodyear Tire & Rubber Co. Goodyear reports the product does not discolor the material it protects. It can be applied to fabric, suede or leather shoes, both soles and uppers; leather jackets, luggage, sneakers and golf bags.

New Nylon Color

Althouse Chemical Co. is marketing Nylanthrene Scarlet 2GL p.a.f., a new offering in its Nylanthrene series of neutral dyeing fast colors for nylon. The new scarlet, in combination with Nylanthrene Red 4RL p.a.f., is said to be capable of formulating the majority of fashion red shades on nylon fabrics. *For further information write the editors.*

Level Dyeing Aide

Dispersol CWL, a new level dyeing assistant said to allow greater flexibility and freedom in the use of acid milling dyes, is now available through Arnold, Hoffman & Co. The new product cuts overall dyeing time and improves level dyeing properties, according to its maker. *For further information write the editors.*

Faster Bleaching Process

A new continuous bleaching process, said to cut manufacturing costs up to 40% on natural and synthetic fibers, has been developed by Olin Mathieson Chemical Corp. The process utilizes Textone, one of Olin's sodium chlorite products. The process, which requires little modification of conventional equipment, extends Textone's use to the continuous bleaching of cotton, rayon, nylon, Acrilan and Dacron, and blends of natural and synthetic fibers. *For copies of the technical bulletin describing the process, write the editors.*

'Aquazine' Softeners

Moretex Chemical Products, Inc., has developed a new process for the manufacture of the non-yellowing hydrazinium based textile softeners marketed by Moretex under the tradename "Aquazine." The new process, which will reduce manufacturing costs by as much as 30%, was developed by Donald L. Davis, plant manager.

Hydrazinium based softeners, a byproduct of atomic fuel research, were developed and patented by W. R. Grace & Co. Between 1954 and 1960, Grace did considerable work in evaluation of these materials for textile and other uses. In 1960, Moretex obtained an exclusive license for manufacture and sale of these materials to the textile trade.

New Textile Colors

A marketing program based on a new line of textile colors, reported to have a high degree of fastness, has been announced jointly by Du Pont's Dyes and Chemicals Division and Riverdale Drapery Fabrics.

Riverdale is featuring the new Du Pont colors, called Savalux fast colors, on the cotton and rayon drapery and slip cover materials it is introducing to the trade. The colors are being made available only to mills which agree to use them under dyeing and printing procedures approved by Du Pont and to submit finished fabrics for critical testing by Du Pont technologists.

The Savalux line is said to bring to Riverdale's new printed fabrics a wider range of fast colors than has been available before, thanks to a special Du Pont textile printing process. In this process, specially prepared dyes are printed and continuously developed in a manner similar to the Du Pont Pad-Steam process, widely used for dyeing solid shades. *For further information write the editors.*

Spandex Fabric Dyes

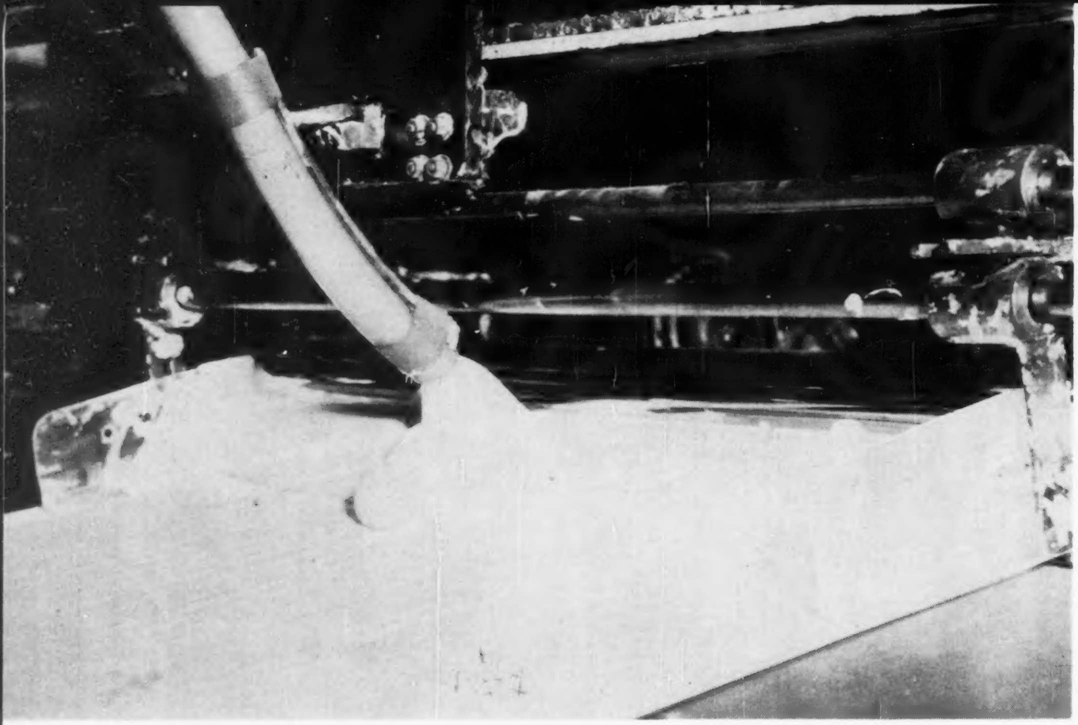
Althouse Chemical Co. is marketing what it terms the "first successful dyes" for Spandex elastic fabrics. Called Spanyl, the new colors do not require any unusual dyeing procedures or techniques, but are applied according to standard practical dyeing methods. Included in the Spanyl series are Yellow 2GS, Orange 2RS, Maroon TRS, Red 2BNS, Blue 3RDS and Grey NS. *For further information write the editors.*

New Yarn-Tinting Process

Speedry Chemical Products, Inc., has developed a new chemical formula for the washable tinting of synthetic and natural yarns. The new process was developed in collaboration with Chemtel Corp., which will market it exclusively under the brandname of Tint-Out. The process is said to make possible for the first time the direct application to yarn of tints that are completely soluble in water. Tests involving Dacron and cotton applications are reported to have proven 100% effective. *For further information write the editors.*

Release Agent

"Solusil-Ra," a new release agent for rubber, plastics, glass, etc., has been developed by Soluol Chemical Co. A major application of this 35% active silicone emulsion is to prevent the buildup of polyurethane on rolls during the heat lamination process. *For further information write the editors.*



FOAM RUBBER pouring on cotton sheeting for use as mattress covers. The hose brings foam from continuous mixer

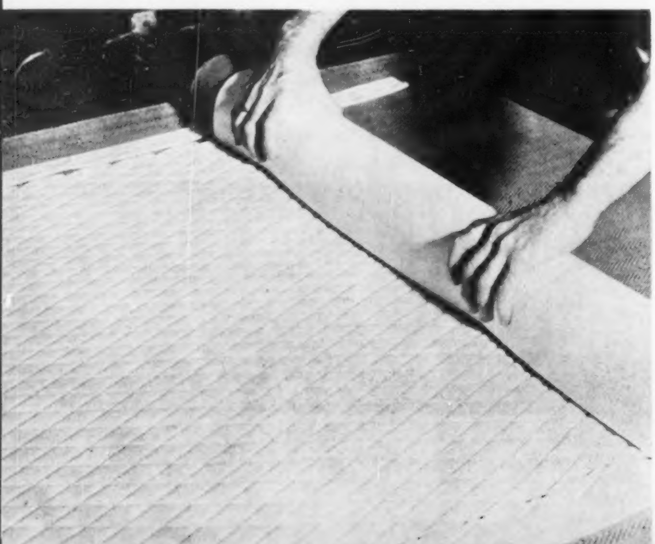
New continuous mixing method

Faster foaming of rubber to fabric

"FOAMING" TO CREATE new applications and more imaginative styling for fabrics is now done more efficiently as a result of continuous mixing of foam rubber. Replacement of batch methods by continuous mixing has also reduced waste, provided better uniformity and speeded up production.

Allen Industries, Rahway, N. J., a foamer of fabrics, is a case in point. The company estimates that continuous mixing can cut waste from as much as 25% to virtually zero. Without a continuous processing system, application of foam rubber to fabrics at Allen would be less efficient and more limited in scope.

Allen handles virtually any fabric to which a foam rubber backing or lining can be applied. Depending on the fabric's end use, the foam rubber will range from 0.050 inch to one-half inch in thickness. The rubber is produced in various colors to complement the color of the fabric being lined.



In the early days of the industry, foam rubber could usually be applied only to heavy, coarse fabrics. But now, fabrics as light and supple as silk, satin and tricots can be coated with foam rubber to adapt them to entirely new uses.

The end-use range of fabrics processed at Allen is wide. Once rubber-lined, the now "foamed" fabrics find their way into items such as footwear, hat sweatbands, brassieres, automobile trunk linings and upholstery, rugs and carpeting and novelty items such as table accessories.

The first step in applying a foam rubber coating is the blending of natural and synthetic rubbers, stored in bulk at the plant, with addition of various other elements required for the complete compound. On the basis of experience with requirements of different types of fabrics, Allen has developed its own blends for best results.

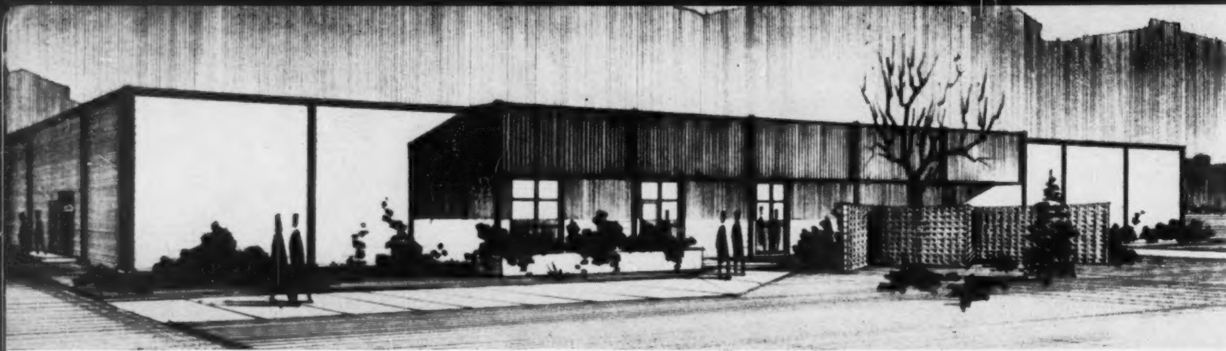
When the raw materials have been mixed in required proportions and properly matured in large mixing tanks, the compound is fed into an Oakes Mixer by the latex pump. Air is metered into the mixing head in the proper volume to produce the exact density of finished foam desired for the specific end-use.

Prior to development of the Oakes Blender, a gelling agent and vulcanizing agent were also metered in minute quantities by separate proportioning pumps directly into the mixing head and uniformly dispersed in the compound. However, elements such as these and color pigment dispersions, where required, are now added in the Oakes Blender after the rubber has been foamed by the Oakes Mixer.

The entire mixing operation is automatic and con-

(Continued on page 61)

Completed foam rubber laminate cloth being rolled for shipment



Architect's drawing of new Mitchell-Bissell plant

Mitchell-Bissell builds new southern plant

Mitchell-Bissell Co., manufacturer of thread guides, has announced the start of construction of a new plant in Rosman near Brevard, N. C. Executive and sales offices of the company, now located in Trenton, N. J., will be established in the new plant, according to John Mitchell, president.

Mitchell also revealed that the new plant, occupying over 16,000 square feet of floor space, will be largely devoted to the production of Mitchell-Bissell chrome plated wire thread guides. As part of its equipment it will contain complete heat treating and industrial hard chrome plating departments. Mitchell-Bissell ceramic thread guides, Mitchell said, will continue to be manufactured in New Jersey.

"The new location in the heart of the textile South," Mitchell noted, "brings Mitchell-Bissell closer to the major mills which are the firm's customers. Equipped with modern machinery and improved facilities of every kind, the new plant and offices will enable the firm to serve customers better, and make faster deliveries."

Mitchell-Bissell, established in 1882 is said to be the oldest manufacturer of ceramic and metal thread guides, and related products in the United States.

New Heavy Denier Acrylic Staple Fiber

A VALUABLE GROUP of new fibers, or laboratory curiosities? This is the question American Cyanamid Co. is seeking to answer regarding a series of heavy denier acrylic staple fibers developed in its laboratories. The new fibers range from 20 to 80 deniers—higher than any fibers now in general use in apparel or home furnishings fashions. Under laboratory evaluation, the fibers were found to offer good dyeability, and many of the physical properties of the company's present 15 denier acrylic staple.

Announcement of the high denier staple was made by Dr. J. M. Salsbury, Cyanamid's director of fibers research. "We are eager to have these new fibers evaluated by the textile trade," he said, "for they represent a development not duplicated in nature, or in any other man-made fiber."

Dr. Salsbury reported that preliminary interest has already been expressed on possible uses for the fibers in floor coverings, pile fabrics, felts, and industrial woven and nonwoven fabrics. Available quantities of the fibers, he emphasized, are still small.

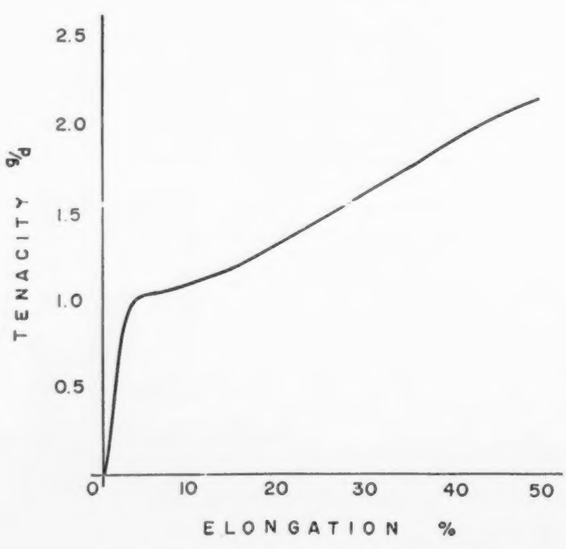
"The fact that an 80-denier fiber is pliable—so much so that a tight knot can be tied in a single filament without breaking or cracking—should increase its commercial potential," he said. "The dyeability of these heavy denier fibers is similar to that of our regular staple fiber. The new fibers take longer to achieve a completely penetrating dyeing, but good color fastness and value can be readily obtained."

Inquiries regarding the new fibers and their commercial evaluation should be addressed to the editors, Modern Textiles Magazine, 303 Fifth Ave., New York 16, N. Y.

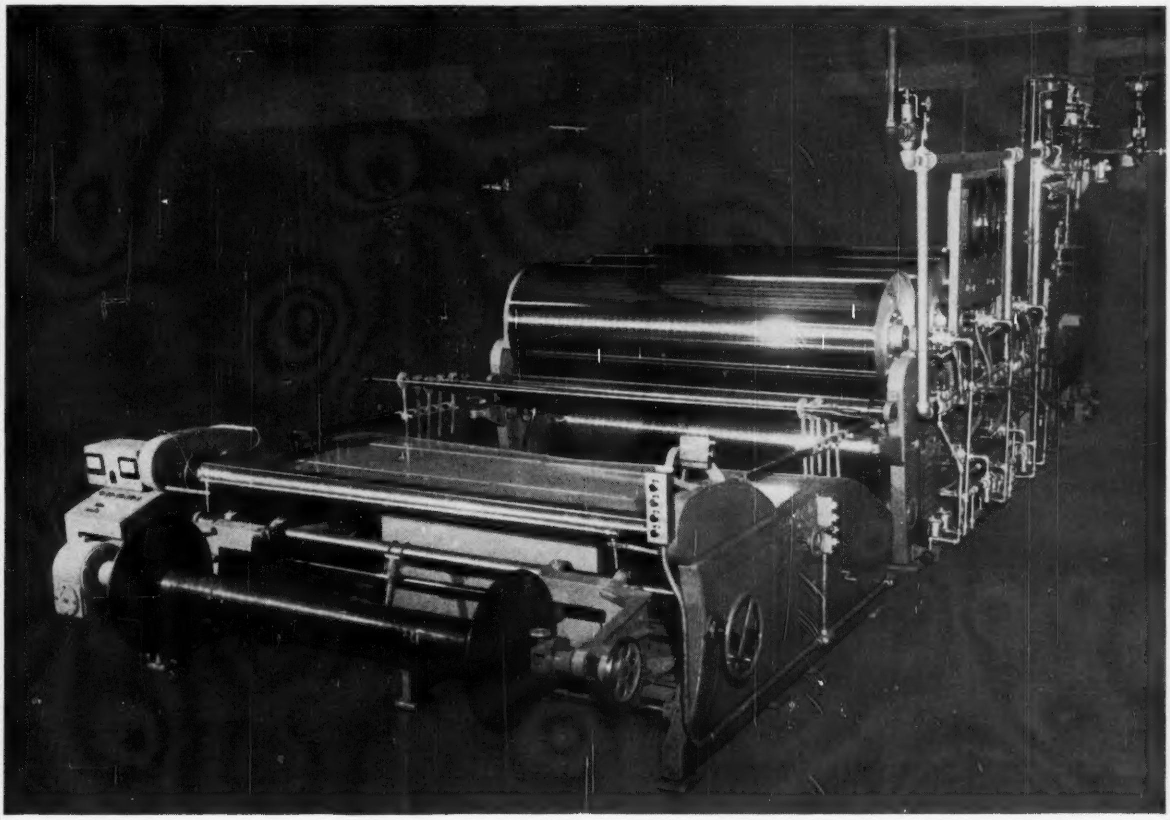
Properties of Heavy-Denier Staple

	Denier per Filament		
	20	40	80
Tenacity, g./d.	2.4	2.5	2.2
Elongation, %	50	56	50
Loop Tenacity, g./d.	1.7	1.4	1.4
Loop Elongation, %	29	22	26
Initial Modulus, g./d.	43	46	39
Compliance Ratio	0.8	0.8	0.9

TYPICAL STRESS STRAIN DIAGRAM
80 DENIER STAPLE



ANOTHER RECENT COCKER GH SLASHER INSTALLATION



Cocker Slashers handle every conceivable type of yarn. The slasher shown here is sizing warps for upholsteries, stripes, patterns, and plain and will accommodate beams from 36″ to 128″ without projecting spindles.

A new installation at
COLUMBUS FIBER MILLS
Columbus, Ga.

The Cocker GH Slasher is unquestionably the World's most efficient and most modern slasher. Only Cocker offers full-length, heavily-girted frames of compact and accessible design which permit sustained speeds up to 184 ypm with practically no vibration. Only Cocker offers the revolutionary Torque Tube Drive* which eliminates stretching, greasy chains, noisy, dirty sprockets, and troublesome splined shafts. These and other valuable features found only on Cocker Slashers back up our claim of producing "TOMORROW'S SLASHING TODAY".

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*Pat. Pending

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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

YANKEE SKILL—At the exhibit of Scott & Williams, A. Dufort of Scragg Group explains to two other visitors the working of one of S & W's circular machines

What's new in knitting

Here's your report on October's big

MANCHESTER KNITTING SHOW

By G. J. Bradley

WITH 280 EXHIBITORS from eleven countries taking part, this year's International Knitting Machinery and Accessories Exhibition held in Manchester claimed to be the largest knitting equipment fair ever held.

One of the most interesting knitting developments was that revealed by Hobourn-F.N.F. (Britain). The Superline K14 warp knitting unit is a machine with an all-purpose layout making possible an extremely wide range of end-products. All fabric constructions of 2-bar lingeries, locknits, raised loop, nets and trimmings, can be produced at gauges between 32 and 14. Simple adaptations convert the unit to 3, 4, 5, or 6 full set guide bar operation. All six bars will knit as well as lay-in, and each of six warp beams can be varied to suit beam speed changes. Standard machine widths vary from 84 inches to 168 inches.

Wildt Mellor Bromley Ltd. (Britain) unveiled a multi-feeder rib jacquard machine for double knit jersey fabrics. Called Type 4RH, it has a 30 inch diameter, with 36 feeders, 18 x 18 and 16 x 16 needles per inch, and is listed as a high production machine with wide area pattern wheel system at all feeders. Scope of the unit embraces 2, 3, and 4 color jacquard patterning with or without birdseye backing, raised effects, blister stitch in a variety of forms, interlock, single or double pique, eight lock and bourrelet fabrics.

Demonstrated for the first time, a four-bar 48 gauge rubber Raschel machine by Karl Mayer (West Germany) incorporates a new type eccentric drive.

Jet Age Knitwear Machinery Corp. (U.S.A.) demonstrated their latest Model PAP unit, and their associate company, Supreme Knitting Machine Co. Inc. (U.S.A.) showed the BRW Bulky Knit Unit, with four needles per inch, and the SAAF/O machine with 18 needles to each inch.

A. Kirkland & Co. (Britain) exhibited a new 30 inch double jersey circular latch needle machine for fast production of top quality fabrics. In this unit, top and bottom plates are mounted on an exceptionally rigid frame; load carrying members are separate from those concerned in the actual knitting. The motor drive and electrical controls are grouped in glass fiber covers on each side of the unit. Yarn packages are carried on a 36-end bobbin framework, the yarn being taken through measured feed units mounted directly above the packages.

A West German company, Alber & Bitzer, showed a jacquard circular unit, the Albiquard Romrs, in

(Continued on Page 42)

Manchester Show

(Continued from Page 40)

which film controlled pattern switch wheels are an unusual feature. This system facilitates the creation of two-color circular bands in unlimited width. Yarn change equipment is not needed, thus the unit can operate at uninterrupted speed.

One of the latest Supermatic Model M's was demonstrated by S. A. Monk (Sutton-in-Asfield) (Britain). This unit has all the features of the Samcomatic fully automatic machines but in addition has all standard attachments under automatic control.

The winding, twisting and yarn preparation equipment sections had much to offer visitors looking for new machinery. Franz Muller Maschinenfabrik (West Germany) showed a new 24-spindle automatic unit which attracted a great deal of attention. Of the circular type, it had drums rotating past a stationary automatic control station and full package magazine. Leesona-Holt (Britain), an associate company of Leesona Corp., demonstrated the Uniconer fully automatic cone winder, a unit which has individual knotting heads on each winding drum to ensure high operating efficiency. Providing yarn remains intact between supply package and tensioning assembly, both these winders knot and resume winding automatically after a thread breakage.

The Scragg Group (Britain), well-known for high-speed crimping machines, launched a new range, the "70's". "In planning the "70's", said one spokesman, we decided the time had come to review the entire range of machines we manufacture." Five completely new units have been introduced, the main one being a CS9 Super-Speed Crimper. This has spinners using a novel principle described as "cushioned precision drive", and 24 inch heaters each with its individual transistorized temperature control. The unit has a six pound take-up package capacity. Supply creels are located between heaters cutting down machine width.

Other new machines in the "70's" range are: the SM uptwister, a successor to the SM4, with a take-up capacity of 13 pounds; the DLW ring doubler for the worsted trade; the SMD3 double-deck, double-twist uptwister; and the DLC ring doubler for filament and spun yarns.

A two-for-one twister introduced by Arundel, Coulthard & Co. (Britain) is designed for the coarse yarn trade and produces folded yarns into twisted yarns between 0.33's and 4's. The low type frame has a simple threading operation working from the top.

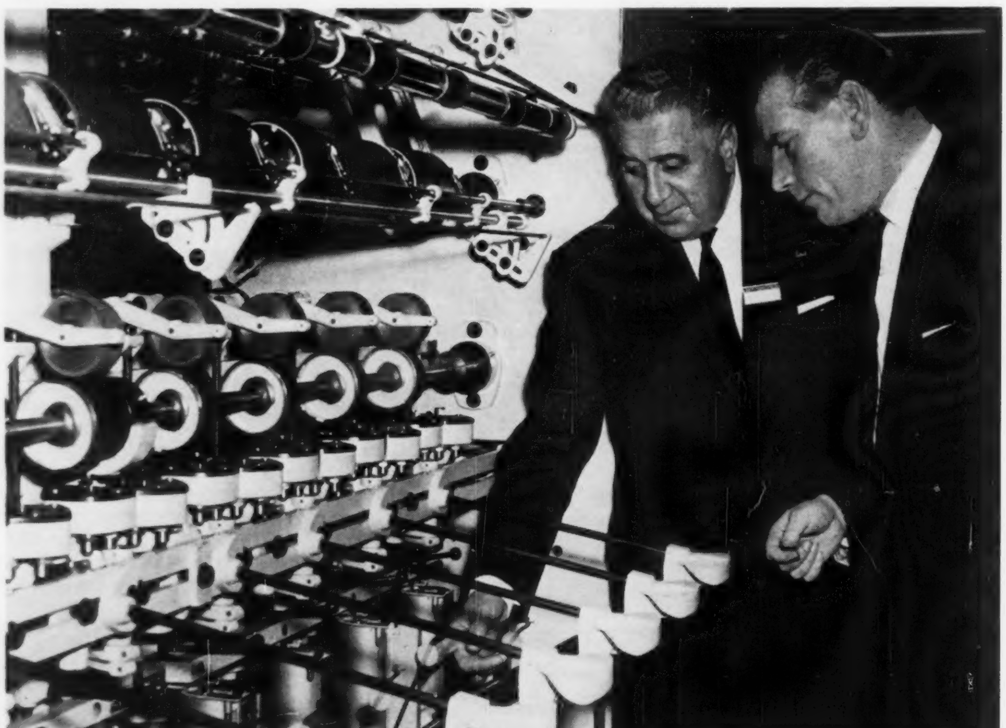
M. Scaglia (Italy) demonstrated a bobbin stripping machine that uses a blast of hot air to strip the waste yarn. The machine operates at a variety of temperatures: from 400°C to 450°C for acetate and nylon, to 800°C for rayon, processing up to 850 bobbins per hour.

A hank-to-can winder seen in Britain for the first time was shown by Fr. Mettler's Sons (Switzerland). With a yarn speed control varying from 250 to 550 yards per minute, it winds yarn from hank to can without draft or tension.

In the finishing section a single layer tenter with precision overfeed device was displayed by Famatex (West Germany). Technicians on the stand showed how accurate pinning and selvage control are obtained consistently over a range of overfeed settings even at high speeds. If mis-pinning occurs the selvage is automatically replaced on the pins without the machine stopping.

A fully automatic hosiery finishing machine akin to the famous Colorplast was shown by Eugen Bellman (West Germany). This was the Colorplast Junior. The machine cleans and dyes, finishes and dries 230 dozen pairs automatically in eight hours. It has been designed specially for the smaller hosiery mill, say the builders.

(Continued on Page 69)



SHOWING HOW— H. Hancock (right) of Scragg Group, Macclesfield, England, explains heater system of Scragg's new C.S. 9 machine to Mr. J. Kolski of Mexico. Picture was taken without yarn on machine to show details of spindle drives. This machine is designed to operate from 200,000 r.p.m.

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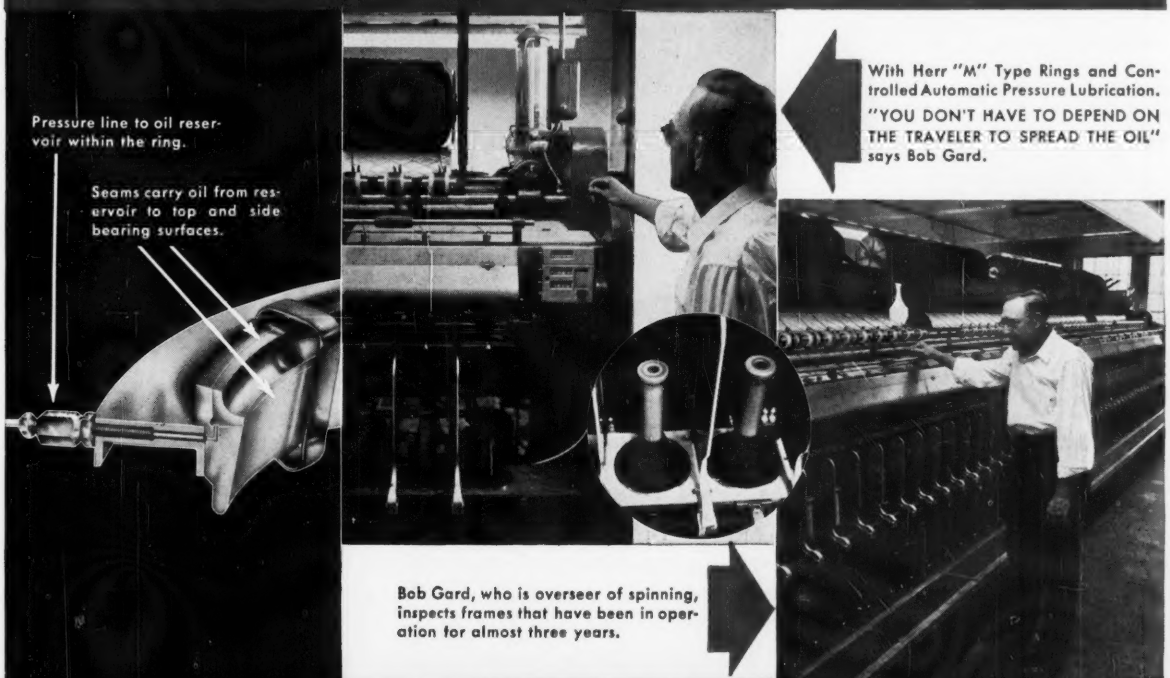
WITH AUTOMATIC PRESSURE LUBRICATION

For better Oil distribution (minimum removal)
— on the path of the traveler

No oil scattering
— on the machine to create maintenance problems
— on the yarn to degrade quality

Benefits

LONGER LIFE OF RINGS AND TRAVELERS
HIGHER SPEED OPERATIONS
IMPROVED PRODUCT
REDUCED OPERATING COST



With Herr "M" Type Rings and Controlled Automatic Pressure Lubrication. "YOU DON'T HAVE TO DEPEND ON THE TRAVELER TO SPREAD THE OIL" says Bob Gard.

Bob Gard, who is overseer of spinning, inspects frames that have been in operation for almost three years.

Illustrations show one of the modern installations at Charlton Woolen Company, Charlton City, Mass., manufacturer of coatings and snow suiting fabrics.

Here's how the system operates: Herr "M" type conical rings contain an oil reservoir running completely around the ring. From this reservoir, seams carry the oil by capillary action to the top and side bearing surfaces of the ring so that the paths of the traveler are continuously lubricated... but with a minimum of oil.

The reservoir is supplied with oil by an automatic pressure system that can be set to give just the right amount of oil . . . eliminating troublesome waste.

After the pump cycle has been established, no supervision is needed. Higher speeds and improved products are possible.

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This remarkable fiber can create new market opportunities in great variety. With proper development, high-volume uses may include products as different as floor coverings, industrial fabrics, work clothes, coated fabrics, upholstery, and pile fabrics. We are now spinning Hercules polypropylene fiber commercially in three forms: continuous multifilament yarn, staple fiber, and tow...bright and semi-bright lusters in natural and solution spun colors. The detailed physical properties, denier tables, comparative coverage data, and other facts will help you evaluate markets. Ask for them.

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380 Madison Avenue, New York 17, New York
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FP61-2

Shown left to right are Augustus Steinthal, Irving Warsoff and Martin Steinthal, principals in merger of Steinthal and Reliable

Reliable Sample Card, Steinthal merge

Steinthal Sample Co. has merged with Reliable Sample Card Co., Inc., according to an announcement by Irving Warsoff, president of Reliable. The merger increases the productive capacity and sales volume of Reliable by about 100%, Warsoff noted in announcing the merger. Warsoff will continue as president of the newly amalgamated firm with his son, Richard Warsoff serving as vice president. The remaining directors are Martin and Augustus Steinthal. The concern will continue to be identified as Steinthal Sample Co.

The merger of Reliable and Steinthal makes the amalgamated organization the largest and most completely integrated sample card operation in the world, Irving Warsoff pointed out.

The Steinthal company has concentrated on selling samples for the men's wear and woolen trades for 78 years. Reliable produces sample cards for the textile fabric and men's, women's and children's garment industries. Reliable employs 350 persons in two plants, one in Brooklyn and one in Manhattan. The Brooklyn plant covers 62,000 square feet of space and an addition is currently under construction which will embrace 105,000 square feet more. The Manhattan plant at 79 Seventh Avenue, New York, covers 22,000 square feet.

The Steinthal plant occupies 80,000 square feet and employs 300 persons. Air-conditioned offices and showrooms covering 10,000 square feet are at 222 Park Avenue South in Manhattan. When the addition to the Brooklyn plant of Reliable is ready for occupancy next year, some 200 more employees will go on the pay roll, Irving Warsoff said.

Walter E. Scholer

Walter E. Scholer, manager of the fabric development department of American Viscose Corp. died suddenly on October 27. Maintaining a wide interest in the entire range of manmade fibers, he was one of the industry's leading technicians. He was a dedicated member of the American Association for Textile Technology and was a past president of that body as well as a member of the board of governors.

He gained his textile education at textile school in Lyons, France and began his business career in 1927 with Cheney Bros., Manchester, Conn. He later worked for A. D. Juilliard and Stehli & Co. before joining American Viscose in 1940. He became manager of the fabric development department in 1948. During the war he worked on the development of military fabrics and was awarded the Naval Ordnance Development Award in 1946.

He was a leading proponent of employing manmade fibers to their best advantage and was continually urging exhaustive studies in end-use requirements. He gave many important talks on fiber and fabric development and was the author of numerous papers on similar subjects.

He was active in Committee D-13 of the American Society for Testing Materials.

Mr. Scholer is survived by his mother, Mrs. Constant Scholer and two sisters Ida and Clara Scholer.

Caprolan Ski 'Slopes'

More than 16,000 yards of nylon pile material made of Caprolan will be used in the world's first Ski-Dek Center, Buffalo, N. Y. The Ski-Dek Center offers an opportunity for skiers, novice or advanced, to engage indoors in all ski maneuvers on a moving slope. Motion is achieved on Ski-Dek machines by passing a belt of Caprolan nylon pile material over a system of rollers set at an adjustable angle to create a slope. The surface, which offers a smooth, gliding ski terrain, has been developed by Callaway Mills. Caprolan nylon, made by Allied Chemical, offers unusual wear resistance and resilience and gives skiers proper "edge control" for their skis.

New Cellulose Filament Method

A new process for the production of regenerated cellulose filaments, invented by John Oliver Smith of Coventry, and David Nicholson Tyler of Codsall, near Woverhampton, England, has been granted U.S. Patent No. 2,997,365. The two inventors have assigned the patent to Courtaulds London, England.

The newly patented process for producing viscose rayon filaments uses viscose having a cellulose content between 4% and 6% and a caustic soda content approximately half that of the cellulose. The cellulose has an average degree of polymerization of at least 300 and the viscose has a salt figure of at least 10 and a ball fall viscosity between 50 and 200 seconds at 18 degrees Centigrade.

The viscose is extruded into a coagulating bath containing from 2.0% to 3.5% of sulphuric acid, less than 15% sodium sulphate, and not more than 0.02% of zinc sulphate as an impurity, to form filaments. The bath temperature is maintained at between 20 and 30 degrees Centigrade and the filaments are removed from the bath while they are still capable of being stretched in air at least 80% of their original length. The filaments are stretched in air immediately after they have been removed from the bath by at least 80% and the regeneration of the filaments is completed after they have been stretched.

Method for Flame-Proofing

A new method of water-proofing and flame-proofing of cellulose fabric after dyeing invented by Kjell Rosenlind, Winneconne, Wisconsin, has been granted U.S. Patent No. 2,991,143, which the inventor has assigned to Kimberly-Clark Corp., Neenah, Wisconsin.

The new method of finishing a cellulosic fabric of unmodified cellulose consists of dyeing the fabric by treating it with a first bath maintained at room temperature which contains a basic dye and 0.1 to 2.0% tannic acid. The fabric is then treated with a second bath maintained at a temperature of less than 100 degrees Fahrenheit. The second bath contains ammonium sulfamate, a water repellent of the wax and aluminum salt emulsion type, and an aluminum salt of an aliphatic acid in an amount sufficient to prevent formation of a precipitate, the amount being at least about 10% by weight of the ammonium sulfamate and 6% of the combined weight of the ammonium sulfamate and the water-repellent.

Sintered Multifilament Structures

A process for the manufacture of sintered multifilamentary structures invented by Gwilym Garrod Thomas, Pontypool, England, has been granted U.S. Patent No. 2,991,147. The patent has been assigned by the inventor to British Nylon Spinners, Pontypool.

The process consists of melt-spinning a macromolecular synthetic linear polymer and extruding it downwards as a plurality of independent filaments. While independent of each other and still incompletely solidified, the filaments are urged directly into tangential contact with a convex aqueous surface. This causes the filaments to cluster together due largely to the high surface tension of the aqueous surface. The filaments are glided through the aqueous surface whereby they are quenched and simultaneously sintered together at points of contact with one another to form a composite sintered multifilament structure, which is then wound up.

How to Label Laminate Garments?

When a textile product consists of a cloth face fabric and a laminated backing of polyurethane or other plastic, how shall it be labelled under the Federal Textile Fiber Products Identification Act? Some light on this question was shed recently by a viewpoint furnished the Textile Distributors Institute by its counsel, Weil, Gotshal & Manges and made available in a bulletin to members of the Institute.

For the guidance of the textile industry generally, the TDI has made public the text of the bulletin which follows:

The question has been raised as to the requirements for labeling of a textile fabric consisting of a face fabric made of a natural or synthetic fiber or mixture and a laminated backing made of polyurethane or similar synthetic material. The question specifically raised was whether the content of the face and backing would have to be shown on a single label or whether separate labels could be used for each part.

The Chief of the Federal Trade Commission Office in New York has stated that it is permissible to use separate labels. The Textile Labeling Act requires the labeling only of the "fiber content" of "textile fiber products". The backing of the fabric is not made of fiber and is not, in itself, a textile fiber product, and therefore, the composition of the material is not required to be stated.

Rule 16(b) requires that all parts of the "required information" be set out on the same side of a label. Since the only required information in this case is the fiber content of the face fabric only that information need be shown on the label.

The composition of the laminated backing would fall in the category of non-required information. It would therefore be optional whether to disclose this information at all or show it on the same label with the required information or on a separate label entirely.

In answer to the specific question which was raised, it is permissible to use separate labels, one giving the fiber content of the face fabric and the other the composition of the laminated backing.

It might also be noted that the particular fabric would probably fall within the category of a "coated fabric" as defined in Rule 1(o), if the weight of the laminated backing is at least 35% of the basic fabric. Under the provisions of Rule 45(a)(4) coated fabrics are not required to be labeled as to fiber content. Therefore it would not be necessary even to give the fiber content of the basic fabric. However, under the provisions of Rule 45 (b), if the fiber content of the basic fabric is shown, the exemption no longer applies and the fibers must be given in the manner required by the Act as indicated above.

500 Attend TDI Dinner-Dance

The Dinner-Dance of the Textile Distributors Institute, widely regarded as the "annual reunion of 'Who's Who' in the textile industry," was held Nov. 9 at the Plaza Hotel in New York City. More than 500 members and guests attended the gala, full-dress affair which began, as in the past, with a smorgasbord cocktail party in the Terrace Room of the Hotel at 7 P.M., followed by a candlelight dinner and dancing in the Grand Ballroom beginning at 8 P.M.

The dinner opened with "Hail to the TDI", the Institute's theme song. Continuous dance music was provided by Mark Towers Orchestra under the personal direction of Stuart Allen. The orchestra, in the course of the evening, played a medley of melodies from the TDI's recent Golf Tournament shows.

In the Grand Ballroom, the fuschia and bronze coloring of the Tiffany invitations was carried out in the floral decorations as well as in the pocket-size combination menu and seating list. The TDI emblem, palms, trellis arrangement and cybotium ferns formed the background decorations. Another highlight of the souvenir Menu and Table List was the dinner committee's message to the guests: "No speeches tonight, glad you could come, have a good time."

Arthur J. Wullschleger, Wullschleger & Co., Inc., was chairman of the dinner committee. Among the members of the committee appointed by Irving Roaman, Reliable Textile Co., Inc., president of the Institute, who acted as official hosts and greeters, were: Edgar I. Freidenberg, Brittany Fabrics, Inc. and Richard A. Roaman, Reliable Textile Co., Inc. as well as TDI vice-presidents Louis E. Kates, French Fabrics Corp. and Louis J. Brenner, Shirley Fabrics Corp.; Ira Jacobson, Cohn-Hall-Marx Co., treasurer; and Nat Leavy, Goldstein & Leavy, Inc., chairman of the board.

Nassau Fabrics Joins TDI

Membership in the Textile Distributors Institute has been extended to Nassau Fabrics, Inc., according to a recent announcement by Irving Roaman, president. The new member has headquarters at 450 Seventh Ave., New York 1, N. Y. The firm, of which Abby Levine is president, is a distributor of men's and boy's woven and knitted fabrics and women's and girl's knitted fabrics. The firm is an affiliate of Abaco Fabrics. According to Mr. Roaman, credit for the new member goes to Morris Weil.

Levi Condolences Expressed

Members of the Textile Distributors Institute expressed their deepest sympathy to Frank D. Levi, Belding Heminway Corticelli, a director of the Institute, at the death of his mother, Mrs. Matilda Levi.

NEEDLE LOOM NONWOVENS

Part One

The potential of Needle Punched Fabrics

By D. C. Nicely

NEEDLE PUNCHING is a fiber processing system of modest historic significance and unknown future which will be determined by the ultimate price-performance characteristics of the end products.

In broad terminology needle punched fabrics have been included in the category of nonwoven fabrics. However, by classical definition of bonded or nonwoven fabrics, needle punched materials do not qualify since they may or may not contain an arbitrary percentage of a bonding agent. Needling may be compared in some respects with the operations of hardening and fulling wool felts.

Interest in needled fabrics is worldwide. There is very real and active interest in Europe, Australia, and North America. The intended product lines are diversified and range from comparatively simple structures to very sophisticated materials. Most of the work is being done behind closed doors; there is little public information relating to the status of the developments. It would be expected that there will be no indication of status or any public announcement until such time as the producers believe that they are ready to market the products.

In evaluating the reasons for the wide interest in this system, we find that there are several possible motives, and they may be categorized as follows. First, this is a new development in materials handling, and all possible information should be assembled so that management decisions can be made as to whether or not the system may be a threat to existing technology. Secondly, it may be possible to produce new products or products with improved properties. Third, this may be the automated gray fabric production line of the future wherein are eliminated drawing, roving, spinning, slashing, beaming, coning, and weaving. Fourth, but not the least in importance, is this a potentially low cost system for fabric production, cheaper than existing means? In the latter case there is an unfortunate lack of experience data with which to answer the question.

Needling as an operation can perform certain functions, and it is this which justifies the existence of

Papers presented at the October 4, 1961 meeting of the New York Chapter of the American Association for Textile Technology in New York City.

D. C. Nicely

Nicely is superintendent of textile development, in the applications research and service department of the Chemstrand Corp. He joined Chemstrand in 1955 as a textile engineer. Earlier, he was with the Visking Corp., and Continental Industrial Engineers. He is a graduate of Earlham College, Richmond, Indiana.

the operation. In general terms needling can create mechanical interlocking or mechanical bonding of fibers; can make possible specific surface characteristics or properties of fabrics; can produce permeability, etc. Needle punching can be practiced as a separate operation or in combination with other systems.

Virtually any fiber of nominal denier and length can be processed through a needle loom, as for example: cotton, wool, jute, glass, cellulosic, and the broad range of manmade fibers. In the design of the sophisticated fabric the selection of the optimum fiber or fiber blend must first be considered. The textile technologist with his knowledge of fibers and fiber characteristics can specify the fiber complement which in his opinion and experience will help to produce the desired properties of the finished product, since fiber properties play a most important role in fabric performance.

Web Preparation Important

Conventional techniques in opening and blending the fiber are as important for needle punched fabrics as they are for conventional textile products. Typical equipment is normally employed.

For highest quality fabrics the carding or web forming operation must be handled very carefully. In the lighter weight materials there can be no compromise in web quality or clarity. Some latitude may be permitted in the very heavy weights, but this must be qualified by specifications of the end product.

A suitably prepared web when passed once through the needle loom receives a nominal amount of mechanical strength and dimensional stability as a result of the interlocking of the individual fibers. The size of the needle, the number and types of barbs, the fiber diameter, the fiber surface characteristics, the number of needles, the number of punches per unit area, and the penetration of the needles all contribute in some fashion to the effectiveness of the operation.

For some products only nominal punching may be required. As an example, a web may receive a light intensity of punching prior to saturation with a bonding agent in order to prevent delamination of the bonded web. In certain other cases light needling may be indicated to impart some degree of dimensional stability to a fiber batt for handling or use.

How Much Needling?

Other products may require an intermediate or medium degree of needling intensity. Apparel and domestic items would be included in this category. Certain types of felts or hard goods require very intense needling in order to obtain the maximum in stiffness or hardness. To some extent the amount of needling will determine production costs and the inevitable selling price. In most cases a multiplicity of passes through the needle loom is required to obtain adequate needle punching intensity to provide product performance.

In this respect it is pertinent that we look at the operating machine. The original needle punching machine had narrow needle boards with few needles. We now have at our disposal boards somewhat wider and with many more needles. It would seem logical that in the future machines will be supplied with even wider needle boards and still more needles. Such a machine would help to reduce the number of passes through the loom and should thereby reduce fabric manufacturing costs. Machine speeds in excess of those now available may be useful in increasing productivity. Whether or not the higher speeds may be helpful or harmful to the fabric properties is a question not answerable at the moment. The past few years have been significant improvements in machine design and operation, and it is not improbable that the next decade may see even more improvements.

Needle punched fabrics may be produced with or without a carrying medium such as a scrim-like material. The use of scrim is a controversial issue. As work continues in the field it is expected that ultimately the dependence on inserts will be minimized. In so doing the economic picture will become more favorable.

For some applications fabric strength may be enhanced by the addition of bonding or stabilizing treatments. Webs made with shrinkable fibers may be compacted and strengthened by passing the needled fabric through heat or steam to shrink the fibers. Fiber shrinkage of 40% and up is indicated. Typical bonding agents may be employed. Fusible fibers incorporated in the blend may be used. Chemical treatments can be very helpful.

For domestic and apparel end uses the gray fabric must be strong enough to withstand the rigors of dyeing and finishing. Although stock dyed or solution dyed fibers may be employed, eventually piece dyeing of the fabric must be practical and economic. Blankets must be napped. Suitings and skirtings will be brushed, sheared, printed, embossed, etc. The importance of proper finishing to obtain aesthetic appeal cannot be minimized. The results of laboratory and development work to date emphasize the fact that the practical aspect of improving performance properties as a function of finishing must not be overlooked.

Market Possibilities Broad

Future markets? Blankets, skirting, innerlinings, suitings, carpet backing, filters, plastic laminates, felts, floor coverings, hats, drapes, and many others. Some industrial items are and have been available for some time. The advent of blankets on the market may not be too far in the future. Skirting fabrics have been developed and are being evaluated. Their market appearance may be dictated by the swing of the fashion cycle.

Performance? A blanket is still attractive and serviceable after home use and 20 launderings. A skirting fabric is still flattering and attractive after 50 home laundry cycles. A fast drying bath mat backing in excellent condition after 25 launderings. These are realities. They are prototypes, development fabrics made in the laboratory, of course, but indicative of what can be done.

There is comparatively little in the literature on technical details of operation and product properties. We are not aware of any publication describing the results of a factorial experiment to determine the functions of fibers, needles, punches, penetrations, etc. with respect to fabric strengths. Such a study could be a lengthy program. The results would be welcomed by many interests.

It is inconceivable that a housewife will purchase a domestic item simply because it was produced by a different materials handling system. Similarly it would be difficult to anticipate volume sales of skirts because of the machinery involved in the manufacture of the gray fabric. The price-performance ratio will be a guiding factor. Herein lies the possible justification for the needle punching materials handling system.

Part Two

How the Needle Loom works

By Harry F. Creegan

IT IS WELL TO BEGIN a description of the mechanics of the needling process with a brief look at the background and history of the machine which performs this process. The machine is generally referred to as a needle loom. Strictly speaking, this is undoubtedly a misnomer, although the term has become so widely used that it is next to impossible to set aside this term for a more properly descriptive one. We at Hunter have adopted the name Fiber/Locker to describe the needling machine. Since, however, the process performed by this machine is a felting process, where fibers are entangled with one another, it is probably more accurate to refer to the machine as a needle felting machine.

By whatever name it may be called, it is by no means a new machine. The needling process itself is at least one hundred years old, but until the last decade, both the needling machine and the products of the machine were quite crude. Sisal, jute and hair were the fibers commonly employed, and they were needled into pads for such uses as upholstery and mattress fillings and carpet underlays. The James Hunter Machine Co. made its first needle felting machine in 1900, and has been actively producing these machines ever since. The first machines were used in the manufacture of horse blankets and saddle pads.

The earliest needle looms were, of course, quite cumbersome, slow in production, awkward to adjust and capable of only a little more than 100 strokes per minute. As time went on, this was gradually increased to 250 strokes per minute and for many years, the best machine available operated at approximately this speed. Indeed, this was quite fast enough for the applications required of it. In recent years, however, the search for means to produce fabrics by more economical methods than spinning and weaving, has prompted research people to investigate the potential of the needle felting machine. Consequently, research in this area has speeded up the development of the needle felting machine so that today's latest design is capable of punching speeds up to 900 strokes per minute. At the same time, a great deal of development work has been done on the needle patterns themselves, needle designs and the relationship of these phenomena to properties of the fabric produced.

Any description of the needle felting machine and its function begins with the barbed needle. These

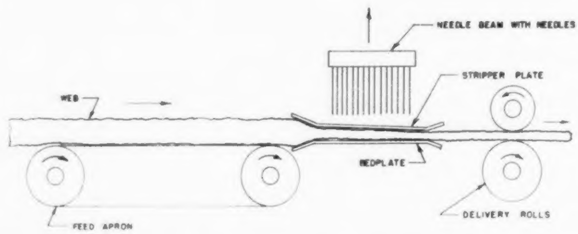


FIGURE TWO—This diagram illustrates method of conveying the web through the needle loom. Movement occurring while needles are withdrawn

steel needles are made in numerous sizes and shapes, the size used depending on the fibers to be needled, with finer fibers requiring needles of smaller diameter. Wire sizes range from .094 millimeters to .355 millimeters. The blade or working part of the needle is usually triangular in cross section, although some needles are made with round and some with square blade cross sections. The shape of the point and the shape, size and number and location of the barbs also may vary greatly, according to the fibers used and the felting action desired. (Figure 1)

Regardless of the fibers or the needles used, the principles of the process performed by the needle

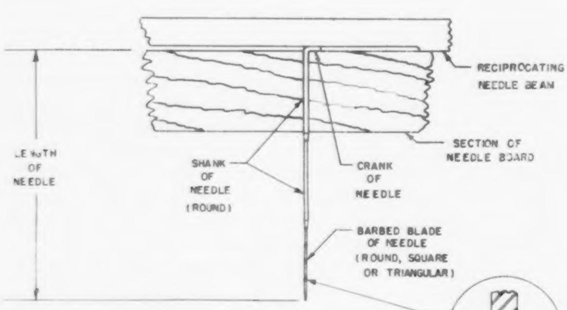


FIGURE ONE—Typical needle and method of attachment

Harry F. Creegan

Creegan is general sales manager of James Hunter Machine Co., a firm he joined in 1953. Earlier he served as sales manager of Rodney Hunt Machine Co., as head of the dyeing and finishing division of the textile research department of American Viscose Corp., and as a chemist and colorist for Joseph Bancroft & Sons Co. He studied at Drexel Institute and at Philadelphia College of Textiles & Science.

felting machine remain the same. A web of fibers from a suitable source is conveyed under the needle carrier. The needle carrier or board pushes the blade of the needle into and partially through the web, each barb catching one or more fibers and pulling them through or partly through the body of the web.

When the motion of the needle is reversed and the needle starts to be withdrawn from the web, the fibers which were pulled down become unhooked from the barbs. The unhooking takes place when that part of the tension in the fiber which was produced by the first or downward motion of the needle is resisted by equal and opposite frictional forces built up between it and other fibers within the structure of the web.

The resulting increase in fiber stresses and inter-fiber friction within the web structure, combined with a certain degree of reorientation of the fibers within this structure, produces an increase in dimensional stability or strength of the web as a whole and an increase in the web density. By repeating the action many times into each unit of area of the web, the accumulated effect of such mechanical interlocking of the fibers can be utilized to produce fabrics with a wide variety of useful properties. (Figures 2 and 3).

The Important Parts

There are five main components to the needle felting machine which allow the process described previously to be performed. First of all, of course, are the needles and the movable beam to which they are attached. The bedplate and the stripper plate form a confining means through which the web of loose fibers is moved and, at the same time, act as guides and controls for the needles and their depth of penetration. The feed apron delivers the loose web of fibers to the machine, and the delivery rolls on the opposite side pull the web through the space between the plates. Above the stripper plate is the needle board in which the barbed needles are held, and this board is moved up and down rapidly in the machine by a system of cranks.

The movement of the feed apron and delivery rolls occurs intermittently so that the web is advanced a short distance each time the needles are pulled up out of the web. The needles go down through matching holes in the stripper plate, then through the web and then through corresponding holes in the bedplate. During this movement of the needles, the web is stationary.

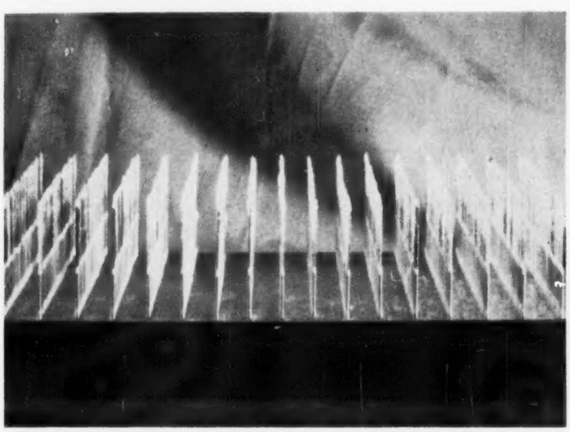


FIGURE FOUR—Needle board as viewed from the end

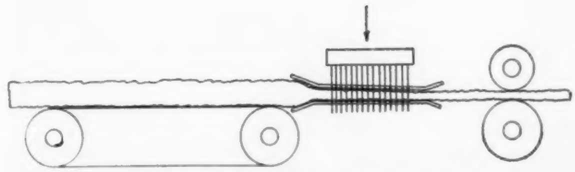


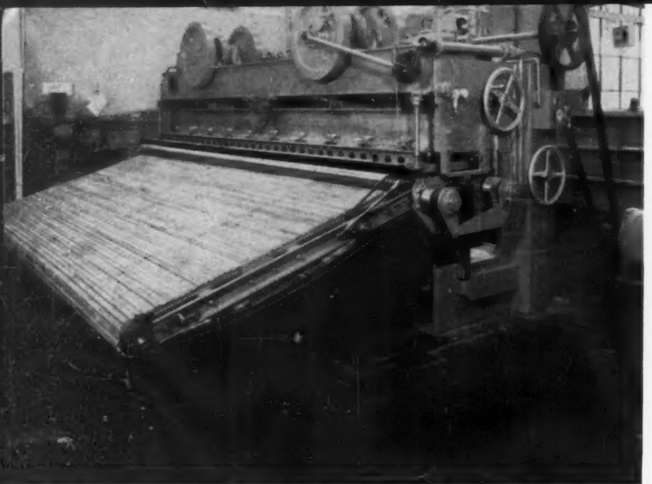
FIGURE THREE—Diagram showing position of needles at bottom of stroke. Feed apron and delivery rolls stopped

Several machine adjustment features are necessary to properly perform the needling process. The height of the stripper plate above the bedplate must be adjustable to allow free passage of the web. This height will vary according to the thickness of the fabric being produced. Also, the angle of the stripper must be adjusted so that as the web increases in density and decreases in thickness, it is still confined between the two plates. Since some webs will naturally be compacted more rapidly than others, they will require a steeper stripper angle. These stripper adjustments are essential in order to prevent excess vertical oscillation of the web while it is being needled. Such oscillation may weaken the felt and result in poor appearance through distortion of the surface.

One of the most important machine adjustments required is the depth of penetration of the needles, or the barbs of the needles, into the web. Control of this feature is achieved by adjusting the height of the bedplate, while the stroke of the needles remains constant for all operating conditions. The length of the stroke of the needles is usually either 2¼" or 3", the longer stroke being used only for the thicker webs. The stripper and penetration adjustments are easily made in the modern machines by single hand-wheel controls and indicating scales, whereas on earlier machines these adjustments required shutting down the machine and using wrenches to reposition and realign the various components.

A major machine adjustment is the speed of the vertical oscillation of the needles. This is accomplished with conventional infinitely variable speed drives on the crank mechanism. The strokes per minute range from 200 to 900 on different machine applications. Increasing the strokes per minute while keeping the web speed constant gives more needling to the web.

Of equal importance is control over the web speed. This speed, when related to the strokes per minute of the needles, regulates the amount of needling given to the web. However, once the number of strokes of the needles for each inch of movement of the felt has been determined to produce a suitable end product, this relationship must be maintained at a constant, regardless of the speed at which the felt travels. Thus, the Fiber/Locker is designed so that the feed apron and delivery rolls are driven from the crankshaft of the Fiber/Locker. Speeding up or slowing down the strokes per minute of the Fiber/Locker then correspondingly changes the speed of the web, so as not to alter the amount of needling in each square inch of the felt. Means are provided in this mechanism to permit adjustment of the speed of the feed and delivery rolls relative to the crankshaft speed, thus allowing alteration of the amount



HUNTER MODEL 8 Fiber/Locker. This is a 160-inch machine

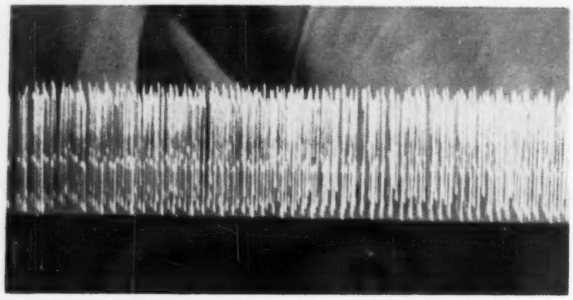


FIGURE FIVE—Needle board as viewed in the direction of felt travel

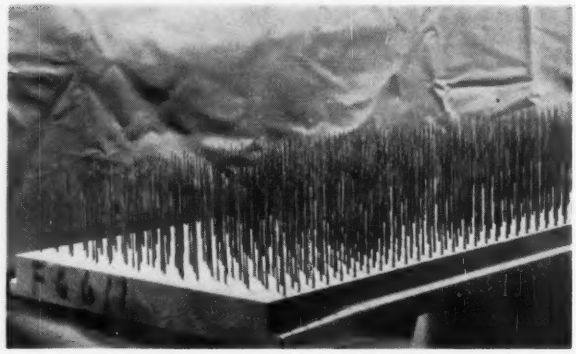


FIGURE SIX—Needle board in inverted position

of needling as desired. In modern machines, this can be done while the machine is running.

The mechanism is also designed so that the speed of the feed apron may be adjusted relative to the speed of the delivery rolls. This is to compensate for stretch or shrinkage occurring during the needling process.

The arrangement or pattern of the needle locations in the needle board has proved to be a difficult design problem. A cursory examination of the needles, as they appear in the board, would indicate that the rows are evenly spaced. You would then logically deduce that with the machine's feed set at any given speed, all the needle impressions of the first row would fall on the second, and these, in turn, on the third, fourth, etc. Similarly, with adjustments greater or smaller than the distance between the needles, there would be like effects. However, in actual practice, the rows of needles are not evenly spaced. As a matter of fact, no two spaces are alike, so that superimposing is avoided. (Figure 4)

When one examines the arrangement of the needles in the board in the direction in which the felt travels, an entirely different picture is seen. In this direction, there are no cases of two needles in the same line or track. (Figure 5) Furthermore, each needle has its own track, and all of the tracks are evenly spaced. These two basic features, the uneven row of spaces and the individual evenly spaced tracks, are absolutely necessary, and while there are many ways that one can arrange the needles to satisfy both of these requirements, it has been found that only a few of the possible arrangements will give a uniform felting action. As a result of several years of experimenting with the many theories which can be advanced on this subject, the James Hunter Machine Co. has evolved a procedure for needle patterning which gives good average results over a broad range of machine settings. (Figure 6)

The number of needles used for each inch of width of the felt is an important factor in the productivity of the machine. We refer to this as needle density. Needle density times strokes per inch equals the number of needle penetrations per square inch obtained in the product. Therefore, the productivity is directly proportionate to the needle density for any given loom speed in strokes per minute. In the latest high speed machines, needle densities can be provided from a minimum of 34 needles per inch to a maximum of 96 needles per inch.

The movement into these much higher speeds and higher rates of punching has brought into sharp focus the problem of the punching loads imposed in producing different felt products. Some products may require punching loads of less than 2 ounces per needle, while other products may produce punching loads as high as 8 to 10 pounds per needle. Individual customers may be producing a range of products which will require a force of 8 ounces per needle today and 0.1 of an ounce per needle on another product the next day. Naturally, as mills become more specialized and limit their range of needled products, it will be possible to produce more efficient machinery for them. Under today's market and manufacturing conditions, however, too many people want to use the needle felting machine as a sledge hammer one day and a tack hammer the next.

Another interesting problem in the use of the needle felting machine has to do with the rates of web travel and as a result of that, the number of needle penetrations per square inch. At one end of the range, we may see customers operating at 10 strokes per inch of web travel, which provides 460 penetrations per square inch with a needle density of 46 per inch. This may be done at 400 strokes per minute, giving a little over a yard per minute of production. At the other extreme, a customer operating at approximately ½ stroke per inch with the same pattern, would get 92 penetrations per square inch. This work is being done at 600 strokes per minute, giving a little over 8 1/3 yards per minute production. A great deal of development work has been necessary to provide this much versatility in the modern needle felting machine.

Another major variation is width range. Machines are now being made in ten different models for felts up to 300" wide. Felt machines for felt widths above 130" are used almost entirely for the making of

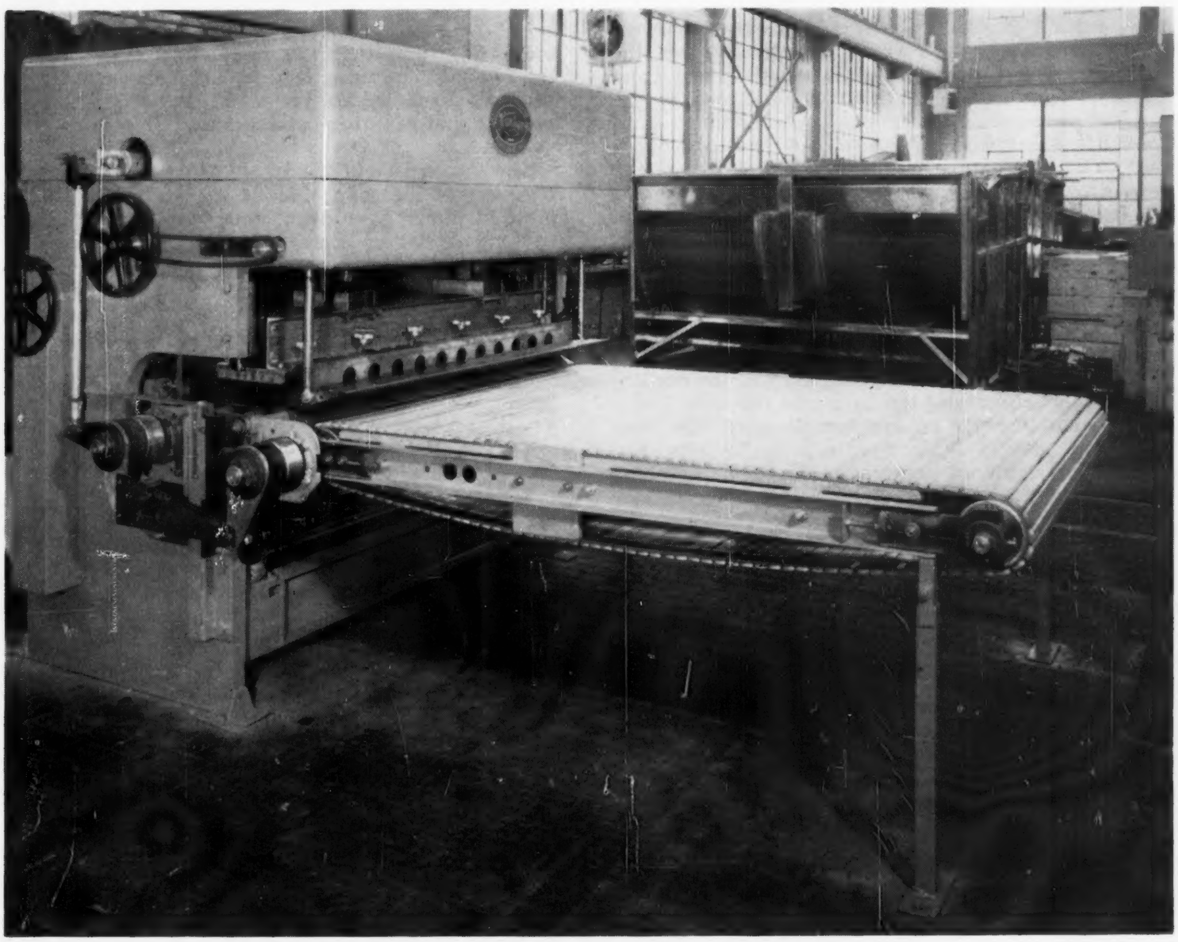
papermakers' felts. Since these felts are made as an endless belt, the machines for their manufacture are much more complicated. They must be designed for ease of removal of the finished felt, necessitating one side of the machine dropping away for this removal to be accomplished. They also represent difficult structural problems, especially in providing sufficient stiffness in cross members to insure uniform penetration of the needles across the entire width of the felt.

Prior to the development of the modern American needle felting machine, vibrations produced by the earlier styles and the noise which they created were a tremendous problem. In all probability, this had something to do with people turning away from needle felting when it was first tried on synthetics. The drive mechanism of the old style needle felting machine could not be dynamically counterbalanced, and this imposed severe restrictions on maximum speeds, the practical limit generally being about 250 strokes per minute. Above that speed, the machines literally shook themselves apart. Heavy foundations were an absolute necessity, making ground floor installations mandatory, and in numerous cases the seismic disturbances throughout the surrounding communities were a serious public relations matter.

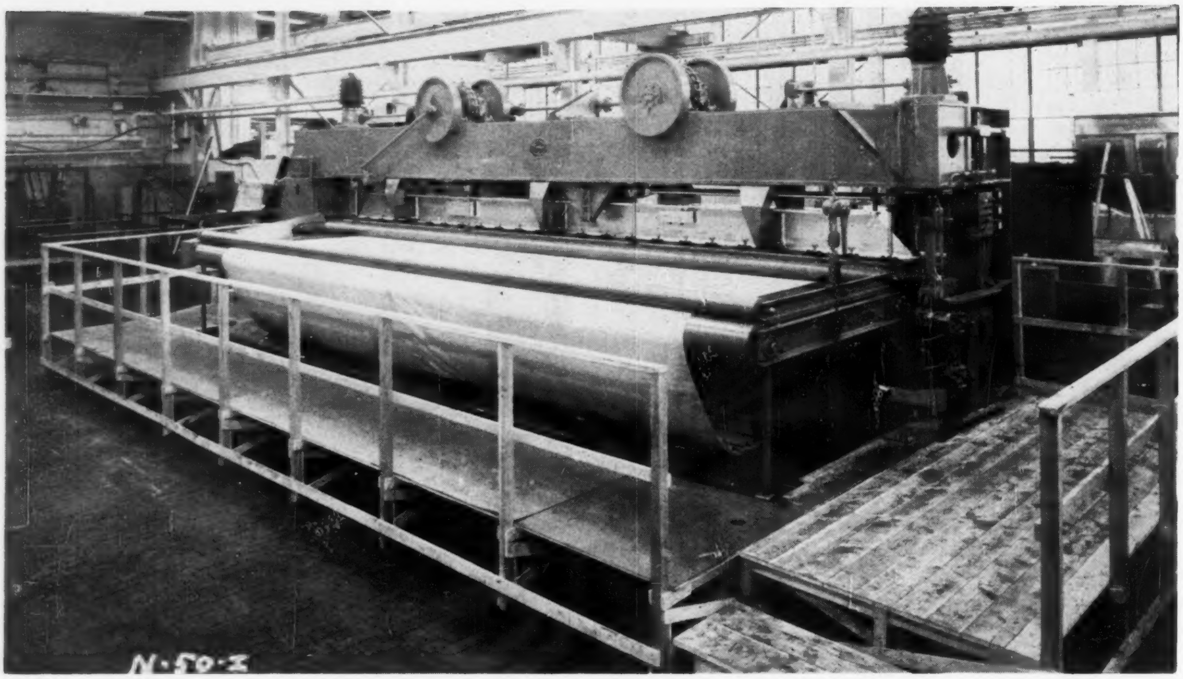
The modern needle felting machine, as exemplified by the Fiber/Locker, has been designed to overcome this problem by the adoption of a unique crank system which permits complete counterbalancing. This involves the use of two parallel counterrotating crankshafts with opposed counterweighted flywheels. These machines are unusual in that they require no special foundations, and many are operating today on the upper floors of wooden buildings, which is conclusive proof of their superiority in this respect. Speeds as high as 900 strokes per minute are entirely practical with these new designs. Mechanical breakdowns brought about mostly by metal fatigue failures, which plagued the older machines, have largely been eliminated by careful structural analysis and the elimination of resonant vibrations.

Much improved access for servicing and threading up and drastically reduced floor space requirements have resulted from the relocation of main actuating mechanisms from the sides of the machine to a position on the top of the machine. In the new machines, no tools are required for making needle board changes or machine settings, and the needle boards can be slid out through an opening in either side frame, which greatly facilitates handling. These and other refinements give us today a highly versatile piece of production machinery, in which the important variables affecting the quality of the product can be easily adjusted by the operator and preset according to the specifications desired from laboratory tests.

This does not mean to imply that there are no problems remaining in getting good repeatability in



HUNTER MODEL 9 FIBER/LOCKER. This is a 65-inch machine



BROAD NONWOVEN GOODS—This Hunter Model 12 Fiber/Locker 310-inch machine is used for turning out papermakers' felts

the needling process. Problems still exist, but they now stem mainly from variables introduced in the preparation of the web prior to needling and from variations in the needles. Minor variations in the needles themselves from one lot to another, even though practically immeasurable, will produce noticeably different results in the quality of the product. It has become increasingly obvious that as the specifications for needled felts are made more exacting, the shape and finish of the needles must be much more precisely controlled.

Needle wear itself is a variable, but is predictable. Needle changes can be scheduled, based on experience. Also, as needles wear in use, periodically increasing the depth of penetration of the needles takes care of the diminishing efficiency of the needles by introducing more of the barb into the web. However, when there is an appreciable variation from the desired shape of the needle to begin with, adjusting the depth of penetration to compensate for the fault is generally not successful. It is highly desirable, therefore, before undertaking full scale production, to determine whether the needle manufacturer can consistently maintain the desired properties in his needles from one lot of needles to the next. As the use of the needle felting machine becomes more and more significant in the production of nonwoven fabrics, the development of needle manufacturing techniques and controls naturally increases.

The selection of the correct needle design and style for a particular application is, almost without exception, something that has to be done experimentally. Today there are laboratory needle punching machines available which will needle a 12" web and on which it is possible to obtain all the variables necessary to evaluate the production requirements for a given end product. Although the laboratory machine does not duplicate in speed or strokes per minute the regular production equipment, the relationship between strokes per minute and forward speed, penetrations per inch, etc., can all be evaluated and translated into production machinery at the required operating or production speed. The laboratory machine also permits the production of samples that can always be duplicated on production machinery.

The comparison of the design of the modern needle felting machine with that of the earlier models is quite striking. A study of this fascinating piece of equipment has indicated that there are areas of knowledge of the process that have not yet even been scratched. Continuing work in these areas will allow the production of even more efficient and more productive machinery. It will be only natural that the development of both machine and sophistication of fabrics will go hand in hand.

Marketing to Be Theme of AATT Conference on Feb. 7

"The Way to Marketing Profits—Converting Textile Technology Into Consumer Satisfaction," will be the theme of the second annual conference of the American Association for Textile Technology on February 7, 1962 at the Hotel Commodore, New York.

In making the announcement, Graham Richardson of the Du Pont Co., general chairman of the conference, indicated that the theme had been selected with a two-fold purpose in mind: to provide textile technicians with better guidance from marketing management based on consumer need; and to better relate the advances in textile technology to marketing management for the benefit of the consumer.

Committee chairmen for the meeting include Arthur Spiro, Waumbec Mills, Inc., technical program; Fred Simmons, Manchester Worsted Mills, treasurer; Robert Nirenberg, Chemstrand Corp., attendance; A. H. McCollough, Modern Textiles Magazine, publications, and R. E. Ellsworth, Allied Chemical Corp., publicity.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarn, staple and tow as reported by the producers in November 1961. All prices are given to change without notice.

CELLULOSIC YARNS

ACETATE

American Viscose Corp.

Current Prices Effective March 22, 1960

Bright and Dull

Denier & Filaments	Intermediate Twist** Cones	Intermediate Twist** Twister T-Tubes	Intermediate Twist** Warps	Spinning Twist Cones & C-Tubes	Spinning Twist Warps
40/11	$	$	$	$	$1.14
45/14	....	....	....	....	1.03
55/14-20	.99	.97	1.00	.93	.87*
75/18	....	....	....	....	.90
75/20	.95	.93	.96	.89	.90
100/28	.91	.89	.92	.85	.86
120/32	.82	.80	.83	.76	.77
150/36	....	....	....	....	.70
150/41	.74	.73	.75	.69	.70
200/54	.70	.69	.71	.66	.67
240/80	....	....	....	.65	.66
300/80	.66	.65	.67	.62	.63

* Tricot Spools Only.
** Standard Twist 2¢ Additional.
Terms: Net 30 Days.

Celanese Fibers Company

Current Prices Effective March 22, 1960

Acetate Filament Yarn Prices

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Intermediate Twist Beams	Intermediate Twist 4-Pound Cheeses	Spinning Twist Cones	Spinning Twist Beams	Spinning Twist O Twist Tubes
45/13	$1.12	$1.13	$	$	$1.03*	$ ....
55/15	.99	1.00	....	....	.87*	.82
75/20	.95	.96	....	.89	.90	.86
75/50	.97	.98	....	....	.92	....
100/26-40	.91	.92	....	.85	.86	....
120/40	.82	.83	....	.76	.77	....
150/40	.74	.75	.74	.69	.70	....
200/52	.70	.71	....	.66	.67	....
240/80	.68	....	....	.64	....	....
300/80	.66	.67	....	.62	.63	....
450/120	.66	.67	....	.62	.63	....
600/160	.65	.66	....	....	....	....
900/80-240	.63	.64	....	....	....	....

* Tricot beams only. This item with Permachem—$.05 additional. 3T/10 electrical finish available at no premium.

3 to 5 turns on Cones or Beams ...... $.02 Additional
Over 5 turns—55 denier ...... $.06 Additional per Turn
Over 5 turns—75 denier ...... $.04 Additional per Turn
Over 5 turns—100 denier ...... $.03 Additional per Turn
Over 5 turns—150 denier & coarser $.02 Additional per Turn
150 Denier 12-TM Tubes ...... $.73
3 Pound Cheeses ...... $.01 Less than 4-lb. Cheeses
2-BU and 4-BU Tubes ...... Same price at 4 & 6-lb. cones
Premium for Serving Tubes ...... $.05
Part Cone Premiums: 2-lbs. ...... $.05
1-lb. ...... $.10
Under 1-lb. .. $.20

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Intermediate Twist Beams	Spinning Twist Cones	Spinning Twist Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
*150/40	1.11	1.12	1.06	1.07
200/104	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/240	.94			

* 150/2Z/40 available in all colors. Contact our District Sales Representative for current availability of colors in other denier.

Over 5 turns—55 denier ...... $.06 Additional per Turn
Over 5 turns—75 denier ...... $.04 Additional per Turn
Over 5 turns—100 denier ...... $.03 Additional per Turn
Over 5 turns—150 denier & coarser ...... $.02 Additional per Turn

Celaperm Black Yarn Prices

Effective March 22, 1960

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Intermediate Twist Beams	Spinning Twist Cones	Spinning Twist Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 turns on Cones or Beams ...... $.02 Additional
Over 5 turns—55 denier ...... $.06 Additional per Turn
Over 5 turns—75 denier ...... $.04 Additional per Turn
Over 5 turns—100 denier ...... $.03 Additional per Turn
Over 5 turns—150 denier & coarser ...... $.02 Additional per Turn

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.
Prices subjet to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices

"Acele"* Acetate

Bright and Dull

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Beams
55-18	$.82	$.86						$1.00
55-24	.82	.86						1.00
75-24	.86	.89		$.90			$.95	.96
75-50				.92				.98
100-32	.82	.85	$.85	.86		$.89	.91	.92
120-50	.73	.76		.77			.82	.83
150-40	.66	.60	.69	.70			.74	.75
200-60	.65		.66				.70	
240-80		.65	.65				.69	
300-80	.60	.62	.62	.63			.66	
450-120	.61		.62				.66	
600-160					$.65		.66	
900-44					.63***			
900-240	.61**						.63	
1800-88					.61***			.62***
2700-132					.61***			
3000-210					.61			

1800 Type 20 only.
(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.
** Bright only 2" Tubes.
*** Type 20 only.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams
75-24	$1.18	$1.28		$1.29	$1.34	$1.35
100-32	1.14			1.23	1.28	1.29
150-40	1.03	1.06	$1.06	1.07	1.11	1.12
300-80		.97			1.01	1.02

Black

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Beams
75-24	$.98	$1.08		$1.09		$1.14	$1.15
100-32	.94			1.03	$1.06	1.08	1.09
150-40	.83	.86	$.86	.87		.91	.92
300-80	.75	.77				.81	
900-44					.74*	.74	

* 2 & 4 lb. ⅝" tbs. is same price as 4 & 6 Tw. Tbs.

Specialty Yarns

Cycloset for Tricot

	Tubes	Beams
40-13 Natural	$1.07	$1.14
45-13 Natural		1.03
55-18/24 Natural	.83	.87
75-24 Natural	.87	.90
100-32 Natural	.83	.86
40-13 Black	1.22	1.29
55-18 Black	1.08	1.12

Terms: Net 30 days. Subject to change without notice.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
* Dupont's Trademark for its acetate yarn.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.
Current

"Estron"* Yarn, Bright and Dull — White

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Tricot Beams Zero Twist
55/13	$1.01	$1.02	$0.99	$1.00	$0.93	$0.94	$0.82	$0.87	$0.86
75/19	.97	.98	.95	.96	.89	.90	....	.90	....
75/49	.99	1.00	.97	.98	....	....	....	....	....
100/25	.93	.94	.91	.92	.85	.86	....	....	....
120/30	.84	.85	.82	.83	.76	.77	....	....	....
150/38	.76	.77	.74	.75	.69	.70	.66	....	....
200/50	.72	.73	.70	.71	.66	.67	....	....	....
300/75	.68	.69	.66	.67	.62	.63	.60	....	....
450/114	.68	.69	.66	.67	.62	.63	....	....	....
600/156	.67	.68	.65	.66	.62	.63	....	....	....
900/230	.65	.66	.63	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.34	$1.35	$1.32	$1.33	$1.26	$1.27
75/19	1.31	1.32	1.29	1.30	1.23	1.24
100/25	1.25	1.26	1.23	1.24	1.17	1.18
150/38	....	....	1.06	1.07	1.01	1.02
300/75	....	....	.96	.97	.92	.83
450/114	....	....	.94	.95	.90	.91
900/230	....	....	.89	.90	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.
Prices on special items quoted on request.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.
* "Estron" is a trade-mark of the Eastman Kodak Company.
* Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Twist Skeins	Twisted Skeins & Cones	8½ Turns	High Twist Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08*
50/36	1.29	1.55	....	....	....	1.85
65/45	1.22	1.38	....	$1.61	....	1.66
75/60**	1.11	1.25	....	1.48	$1.53	1.56
100/74**	1.02	1.15	....	1.40	1.45	1.51
125/60	1.01	1.12	$1.16	1.37	....	....
150/120	.99	1.08	1.18	1.33	....	....
300/225	....	1.01	....	....	1.14	....
900/744	....	.91	....	....	....	....
1800/744	....	.91	....	....	....	....

* Includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"4" HH Spool Spun Yarn

Den/Fil	No Twist Tubes	No Twist Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.05	1.05	....	....	....	....	....
65/45	1.13	....	....	....	....	$1.50	....
75/45*	1.04	....	$1.15	$1.15	$1.38	1.38	$1.46
100/60*	.96	....	1.10	1.10	1.30	1.30	1.38
125/60	.91	....	1.06	1.06	....	....	....
150/90*	.83	....	.87	.87	1.21	1.21	1.30
150/120	.87	....	....	.99	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil	No Twist Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	$1.60	$1.85	$1.85	....	....
75/45	1.48	1.58	1.58	$1.78	$1.88
100/60	1.38	1.48	1.48	1.68	1.78
150/90	1.21	1.28	1.28	1.63	1.73
300/120	1.21	1.28	....	....	....

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.50	$1.40
1519**	155/90	....	....	1.50	1.40
2008***	200/120	....	....	1.11	1.01
3002	315/180	$1.15	$1.05	....	....
4011	410/224	1.15	1.05	....	....
6001	600/360	1.13	1.03	....	....
8001	860/450	1.13	1.03	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.
** Code 1519 can be run in warp or filling.
*** Available in 10 turns at 5¢ extra per pound.

CUPIONI Type B

Code	Den/Fil	2½ Turn Cones
9650	70/45	$1.69
9660	100/60	1.53
1545	150/90	1.35
9730	285/135	1.15
9792	450/225	1.15
9819	600/372	1.12
9837	940/372	1.02

"Spun Dyed Cupracolor is spun 150 deniers at .30¢ per pound extra, 285 and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers."

STRATA SLUB

Code	Den/Fil	Twisted Cones	Price
9747	275/225	3½ Turns	$1.25
9798	450/372	2½ Turns	1.15
9823	600/372	2½ Turns	1.10
9847	960/372	2½ Turns	1.02
9885	1290/372	1½ Turns	1.00
9934	2680/744	1½ Turns	1.00

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Twisted Cones	Price
9699	150/148	2½ Turns	$1.35
9769	300/224	2½ Turns	1.25
9782	450/270	2½ Turns	1.05
9809	600/360	2½ Turns	1.05
9840	900/450	2½ Turns	1.00
9924	2000/744	2½ Turns	.95

TUSSON

Code	Den/Fil	2½ Turn Cones	3½ Turn Cones
9668	100/60		1.58
9678	150/90	$1.35	....
9745	285/135	1.15	....
9783	450/225	.85	....
9821	600/372	.80	....
9828	940/372	.75	....

Spun Dyed Cupracolors 30¢ extra per lb.
Available in 450 denier only.
Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice.

American Enka Corp.

Current Prices
Effective February 29, 1960
Standard Quality Yarns

NATURAL

Den./Fil.	Luster	Turns		Weaving Cones	Weaving Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5	S	....	....	....	....	....	1.63
50/20	B	4	S&Z	....	....	....	....	1.52	1.64
75/10	B	3	S&Z	....	....	....	....	1.02	....
75/18	E	4	S	....	....	....	....	....	1.14
75/30	B	2.5,4	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/30	B	8	S	1.24	....	1.49	1.59	1.12	1.24
75/45	P,E	2.5,4,5	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/60	B,S	3,4	Z	1.16	....	....	....	1.04	....
100/14	B	3	S&Z	....	....	1.15	1.23	.90	....
100/40	B,E	12	S&Z	....	....	....	....	....	1.29
100/40	B,S,E	4,5	S&Z	.98	....	....	....	.90	.98
100/40	B	6	S	1.17	....	1.34	1.44	1.09	....
100/40	B,S	2.5,4	S&Z	.98	.98	1.15	1.23	.90	....
100/60	B	4	S&Z	....	....	....	....	.90	....
100/60	E	2.5	S	1.00	1.00	....	....	.92	....
125/40	E	3	Z	.95	.95	....	....	.87	.90
125/50	B,S	3	S	.96	.96	....	....	....	....
150/40	B,E	0		.745		....	....	....	....
150/40	B,S,E	2.1,3	S&Z	.82	.82	.96	1.03	.78	.82
150/40	B,E	5	S&Z	.90	.90	1.15	1.25	.86	....
150/40	B,E	8	S&Z	.95	.95	1.20	1.30	.91	....
150/60	B	3.0	S	.82	.82	....	....	....	....
150/90	E	2.1	S&Z	.83	.83	....	....	.79	....
200/40	B	2.1	S	.81	.81	.94	1.01	.77	....
200/40	P	3	Z	....	....	.94	1.01	.77	.81
250/60	P,E	2.4	Z	....	....	.93	1.00	.77	.80
300/30	E	3	S	.81	.85	....	....	....	....
300/40	B	3.2	Z	.73	.73	....	....	....	....
300/50	B,E	3	S	.73	.76	....	....	....	....
300/60, 120	B,S,E	2.1	S&Z	.73	.73	.82	.89	.71	.73
300/60	B	3.5	S	.73	.73	.82	.89	.71	....
300/60	B	6	S	.86	.86	....	1.00	.84	....
300/120H.T.	B	2.5	S	.75	.75	....	....	.73	....
450/60	B	3	S	.69	.71	....	....	.67	....
450/80	B,E	3	S	.69	.71	.78	.85	.67	....
600/80	B,E	3	S	.73	.75	....	....	....	....
600/120	B,E	3	S	.69	.71	.78	.85	.67	....
900/50	B	3	S	.69	.71	....	....	.67	....
900/120	B	3.4	S	.69	.71	.78	.85	.67	....
900/120H.T.	B	3.4	S	71	.71	....	....	.69	....

B = Briglo E = Englo (Dull)
S = Softglo (Semi-Dull) H.T. = High Tenacity

Jetspun® (Colored Yarns)

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams	Colors
100/40	Regular	2.5S	$1.35	$1.35	All
150/40	Regular	2.1S	1.17	1.17	All
200/40	Regular	8.0S	1.28	1.28	All
300/120	Regular	2.1S	1.09	1.09	All
450/80	Regular	3.0S	1.05	1.05	All
600/80	Regular	3.4S	1.04	1.04	All
300/40	High	3.4S	1.11	1.11	All
900/120	High	3.4S	1.06	1.06	All

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft® (Lofted Rayon Filament Yarns) Natural and Jetspun®

Denier	Denier per Filament	Twist	Cones or Tubes Natural	Black	Other Colors
5300	15	3.0S&Z	$.65	$.75	$.82

Registered Trademark for American Enka Texturized yarn.

PEOPLE —

Carroll C. Parker has been appointed sales manager for Curtis & Marble Machine Co.

Frank L. Poirier has been named manager of marketing—home furnishings, for Allied Chemicals National Aniline Division.

John G. Davoud has been named executive vice president of the Firestone Plastics Co. and Firestone Synthetics Fibers Co.

Albert J. Buckenmyer has been elected treasurer and **Donald M. Smith** named controller of Midland-Ross Corp.

Buckenmyer

James S. Calvo has been named sales manager for textile machinery in South America for Crompton & Knowles International Ltd.

Ajalon A. Tillery has joined the staff of Turner Jones Co. to assist in merchandising and fabric development of denims.

Millard K. Ryan, Jr., has been appointed manager for fashion trade relations; **Ralph W. Jones, Jr.,** has been named marketing manager for rugs and carpets, replacing **John R. Emery** who has been transferred to the New York office; **Howard P. Brokaw** was appointed director of the Industrial Marketing Division, all in Du Pont's Textile Fibers Department. In other appointments **John C. Hoscheit** was named technical service group manager for nylon, and **Samuel T. Price** is now technical service group manager for Orlon.

Rudolph Lux has been named product manager—cotton machinery, at Whitin Machine Works.

Jesse J. Loredo has been promoted to manager—mill surveys, for Whitin Machine Works.

American Viscose Corp.

Effective October 13, 1959

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
		Regular Turns					
75	10-30	Bright	$1.41	$1.32	$1.14	$1.14	$1.02
75	30	Dull	....	....	1.14	1.14	1.02
100	14-40	Bright	1.23	1.15	.98	.98	.90
100	60	Dull	....	....	1.00	1.00	.92
150	24-40	Bright	1.03	.96	.82	.82	.78
150	40	Semi-Dull	1.03	.96	.82	.82	.78
150	40	Dull	....	....	.82	.82	.78
150	90	Dull	....	....	.83	....	.79
200	10-44	Bright	1.01	.94	.81	.81	.77
250	60	Semi-Dull & Dull	1.00	.93	.80	.80	.77
300	15	Bright	....	.85	.78	.78	....
300	30	Dull Flat Filament	....	....	....	.85	....
300	44	Bright & Dull	.89	.82	.73	.73	.71
300	234	Dull	....	....	.83	....	.81
450	60-100	Bright	....	.78	.69	.71	.67
600	100	Bright & Dull	....	.78	.69	.71	.67
900	50-100-150	Bright	....	.78	.69	.71	.67
1200	75	Bright	....	.78	.69	.71	....
2700	150	Bright	....	.78	.69	.71	....

Extra Turns Per Inch

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
150	40	Bright 6-Turns	$1.25	$1.15	$ .90	$ .90	$ .88
200	44	Bright 6-Turns	....	1.05	.96	.96	....
300	15	Bright 5-Turns	....	....	.86	.86	....
300	44	Bright 4.3-Turns	....	....	.81	....	.79
300	44	Bright 6-Turns	.97	.90	.86	.86	.84
300	120	Rayflex 6-Turns	....	....	.93	.93	....
600	30	Bright 5-Turns	....	.86	.82	.82	.80

Rayflex Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
150	40-60	Rayflex	$	$ ...	$ .85	$ .85	$ .81
200	75	Rayflex	....	....	.84	.84	.80
300	60-120	Rayflex	....	....	.75	.75	.73
450	120	Rayflex	....	....	.71	.71	.69
600	234	Rayflex	....	....	.71	.71	.69
900	350	Rayflex	....	.80	.71	.71	.69

Spun Dyed Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	$1.71
100	Regular Strength	1.35
150	Regular Strength	1.17
200	Regular Strength	1.14
300	Regular Strength	1.09
450	Regular Strength	1.05
600	Regular Strength	1.05
900	Regular Strength	1.05
300	High Strength	1.11
450	High Strength	1.06
900	High Strength	1.06

Avicron Yarns

Avicron Yarns

Denier	Filament		Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply	$.61
2700	150-300-980	Singles & 2 Ply	.58
2700	980	Singles 5 TPI	.61

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks 14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Fibers Company

Effective October 12, 1960

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil/Twist		Beams	Cones	Cakes
75/30/2Z		$1.11		
75/30/3		1.11	$1.10	$.98
100/40/2Z		.97		
100/40/3		.97	.96	.88
100/40/5			1.02	.95
100/60/2Z	NS	.97	.96	
100/60/3			.98	.90
125/40/2Z		.95		
125/40/3		.95	.94	.87
150/40/0	NS		.74½	
150/40/2Z		.81		
150/40/3		.81	.79½	.76
150/40/5			.90	.86
150/40/8			.95	.91
150/40/10			.98	.94
150/90/0	NS		.77½	
250/60/0	NS		.74	
250/60/3			.80	.77
300/50/0	NS		.70	
300/50/2Z		.72		
300/50/3		.72	.70½	.69
450/60/0	NS	.68	.67	
450/60/3		.70	.69	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.
All previous prices withdrawn.
Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Industrial Rayon Co.,—Div. of Midland-Ross

Effective June 15, 1961

Continuous Process Textile Yarns

Denier	Filament	Turns per In.	Type	Beams	2.8# Cones	4.4# Cones and Tubes
150	40	2.5"S"	Dull	.82	.82	
150	40	2.5"S"	Bright	.82	.82	
200	20	2.5"S"	Bright	.81	.81	
300	44	2.5"S"	Bright	.73	.73	
450	60	2.0"S"	Bright	.69		.69
600	90	1.5"S"	Bright	.69		.69
900	50	2.0"S"	Bright	.69		.69
900	150	2.0"S"	Bright	.69		.69
1100	480	2.0"Z"	Bright-extra strong	.66		.66

Lustre #4 is semi-dull.
Prices are subject to change without notice.

Strawn Monofilament

Denier	Filament	Turns per In.	Type	4.4# Cones	Spools and Tubes
450	1	0	Bright and Dull	1.00	1.05
1250	1	0	Bright and Dull	1.00	1.05

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in continental United States except Alaska.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Denier/Filament	Twist	Knitting* Cones	No Twist Knitting Cones	Weaving Cones, Velvet Cones, Beams, Tubes**	Untreated Cakes
Normal Strength Yarns — NARCO					
75/30	3.5			1.14	1.02
75/30	7			1.27	
75/30	12			1.35	
75/30	15			1.37	
75/30	20			1.40	
100/40/60	3.5			.98	.90
100/40	12			1.22	
125/25/60	3			.96	.87
125/52	10			1.13	
150/42	0		.74½		
150/42/60	3	.80½		.82	.78
300/75	0		.71		
300/75	3	.73		.73	.71
900/46	2.5	.69		.69	
1800/92	2.5	.69		.69	

* Oiled Cones $.01 per pound extra for Graded Yarns only.
** 1 lb. Tubes $.02 per pound extra for Graded Yarns only.

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices

Arnel Yarn Prices
Bright & Dull

Effective August 11, 1961

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/LTDZ/15	$	$1.25	$ ....
55/2Z/15	1.32	1.33	....
75/LTDZ/20	....	1.21	....
75/2Z/20	1.26	1.27	....
100/2Z/26	1.14	1.15	....
150/2Z/40	.95	.96	....
200/2Z/40	....	...	....
200/2Z/52	.92	.93	1.25
300/2Z/80	.87	.88	1.23
450/2Z/120	.86	.87	....
600/2Z/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—$.02 Additional
Premium for Black Arnel—$.25 Per Pound
Premium for Navy Arnel—$.37 Per Pound

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Faster Foaming

(Continued from page 36)

tinuous. The foam rubber is discharged from the mixing equipment through hoses. It is fed directly onto the material to be coated, as the fabric moves continuously along a conveyor. The consistency and appearance of the foam rubber as it pours onto the fabric is akin to that of rich whipped cream.

An adjustable "doctor blade" is employed to apply the foam rubber coating to the specific thickness desired. After the coating has been applied, the coated fabric moves under a bank of infra-red lamps to gel the foam rubber and then to the dryers for final curing. After curing, it is cooled, rolled and shipped back to the customer ready for use.

The Oakes Mixer and Blender used in Allen's plant are made by the E. T. Oakes Corp., Islip, N. Y. *For further information about the process and equipment described here, readers may write the editors.*

Enka Outlook Brighter

American Enka Corp. reported a substantial increase in earnings and sales for the first 36 weeks of this year, reflecting an increase in demand for its rayon and nylon yarns. "Demand for our rayon yarns has been strong and there has been some recent firming in the prices of textile yarns and staple," Philip B. Stull, chairman of the board, told stockholders at the recent annual meeting.

Stull said it now appears certain that all 1962 passenger cars will be equipped with tires made from Tyrex rayon yarn, of which Enka is a major producer. "Shipments of Enka nylon yarns have shown an upward trend throughout the year as additional production facilities have been completed and capacity increased," he said. "Our nylon expansion program continues on schedule and is expected to be completed in the Spring of 1962."

In other developments, Dr. Frits Prakke was appointed general manager of the rayon division, and Claude S. Ramsey, Jr., named general manager of the nylon division. H. G. Heedy was named assistant general manager, rayon staple fiber, and M. F. Wesenhagen appointed assistant general manager, rayon filament yarn.

Enka also reorganized its merchandising activities on a divisional basis, with S. W. Holmes appointed rayon merchandising director and Jay Kaner nylon merchandising director. Kaner will continue to handle advertising on a centralized basis as director of advertising.

1962 Greenville Show

Applications for exhibition space at the 22nd Southern Textile Exposition, to be held October 15-19, 1962, at Textile Hall, Greenville, S.C., have been mailed to some 500 manufacturers and dealers in textile machinery equipment, supplies, primary and fabricating materials and parts. About 250 firms already have made tentative application for space, according to Miss Bertha M. Green, exposition director.

The 1962 exposition will be the last to be held in the present Textile Hall. Plans are being drawn for a new Textile Hall to be constructed on a 30-acre site adjoining Greenville Municipal Airport. Exhibitor suggestions for the new building will be sought.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective February 6, 1961

Industrial Yarn Prices

Prices Subject To Change Without Notice

	Denier/ Filament	Twist	Standard Quality Beams		Cones
TYREX (ENKA—5000)	1100/720	Z	.57		.595
	1650/1100	Z	.51		.535
	2200/1440	Z	.48		50.5
	3300/2160	Z	.48		50.5
TYREX FABRIC (ENKA—5000)	1100/720	Z		.69	
	1650/1100	Z		.60	
	2200/1440	Z		.57	
	3300/2160	Z		.57	
SUPRENKA M UNSLASHED	1230/720	Z	.57		.595
	1600/1100	Z	.53		.555
Super High Tenacity Yarn	1800/1100	Z	.51		.535
	1870/1100	Z	.51		.535
	2200/1440	Z	.48		50.5
	2400/1440	Z	.48		50.5
	3650/2160	Z	.48		50.5
SUPRENKA MS SLASHED	1100/720	Z	.57		.595
	1650/1100	Z	.51		.535
Super High Tenacity Yarn	2200/1440	Z	.48		50.5
	2200/1440	(5.5Z)	.505		.53
	3300/2160	Z	.48		50.5
SUPRENKA 2000	1100/480		.56		.585
High Tenacity Yarn	1230/480		.56		.585
	1650/720	O-Z	.50		.525
	1820/720		.50		.525
	2200/960	O-Z	.47		49.5
	2400/960		.47		49.5
	3300/2160		.47		49.5
CHAFER YARN	1130/480	(5Z)	.60		.60
SEWING YARN	1230/480	Z			.65
	1750/720	Z			.55
	1820/720	Z			.54
SUPRENKA HI MOD.	1100/1100	Z	.67		.67
SUPER HIGH TENACITY—DIMENSIONALLY STABLE YARN	1650/1644	Z	.61		.61
	2200/2160	Z	.58		.58

American Viscose Corp.

Effective February 9, 1961

Tyrex*

Tyrex* Rayon Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	O	.57	.595
1100	980	Z	.57	....
1650	1500	O	.51	.535
1650	1500	Z	.51	....
2200	1500	O	.48	.505
3300	3000	O	.48	.505

Tyrex* Rayon Tire Fabric

Denier	Filament		Carcass	Top Ply	Breaker
1100	980/2		.69	.69	.69
		Factor	Open-525	300-490	115-272
1650	1500/2		.60	.61	.635

Factor—determined by dividing total ends by picks.

* Tyrex—Trademark of Tyrex Inc.

Rayon Tire Yarn

Yarn

High Strength

Denier	Filament	Twist	Unslashed Beams	Unslashed Cones	Slashed Beams	Slashed Cones
1100	490	O	....	....	.56	.585
1150	490	Z	.56	.585	....	....
1650	980	Z	.50	.525	....	....
1650	980	O	....	....	.50	.525
1875	980	Z	.50	.525	....	....
2200	980	O	....	....	.47	.495

Super "Rayflex"

Type 120						
1800	1500	O	....	.535	....	....
4400	3000	O	....	....	.48	.505

Chafer Yarn

1100/490 High Strength 5Z Twist .60 .60

Adhesive Dipped Yarn or Cord

.06 PREMIUM

Cord on cones in regular Tire Yarn twists same as fabric prices.
Other twist combinations—prices quoted on request.
Special packages take premiums indicated:

4.0 oz. Wardwell Tubes	.20
10.5 oz. Wardwell Tubes	.10
1.5 lb. Regular Braider Tubes	.06
3.5 lb. Tubes	.045

Single Yarn—Based on cone price.
Plied Yarn—Based on fabric price.
All yarns sold "Not guaranteed for dyeing"
The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition freight collect.

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of the Mississippi River, in which event the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.

Price subject to change without notice.

Inferior Yarns—Designated HS-SR	.06 Below First Quality Price
Skein Yarn	.04 Above First Quality Price
Adding 6 Turns to "O" Twist Yarn	.05

"Avisco" Industrial Sewing Thread

Effective March 1, 1961

Denier	Filament	Description	Twist	Package	Price
1100	980	Super "Rayflex" 120	O	9 lb. cone	.64
1100	980	Super "Rayflex" 120	2Z	4 lb. cone	.64
1500	980	Super "Rayflex" 120	O	9 lb. cone	.59
1500	980	Super "Rayflex" 120	2Z	4 lb. cone	.59
1780	1500	Super "Rayflex" 120	O	9 lb. cone	.55
1780	1500	Super "Rayflex" 120	2Z	4 lb. cone	.55

Domestic freight prepaid.
Prices subject to change without notice.

Celanese Fibers Company

Effective December 27, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.
Prices subject to change without notice.
All previous prices withdrawn.
Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices Effective May 11, 1961

"Super Cordura"*

Den Fil	Turns/in	Beams	Cones
1100-720	2	.57	.595
1200-720	2		.595
1600-960	2		.555
1650-1100	2	.51	.535
1800-1100	2	.51	.535
2200-1440	2	.48	.505
2400-1440	2	.48	.505

Terms: Net 30 Days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Co.,—Div. of Midland-Ross

Effective June 15, 1961

Tyron

High Tenacity Yarns and Cords for Industrial Products

Denier	Filament	Turns per Inch	Cones	Beams
1100	720	3.0 "Z"	.585	.56
1150	720	3.0 "Z"	.585	.56
1650	1100	3.0 "Z"	.525	.50
1700	1100	3.0 "Z"	.525	.50
2200	1440	3.0 "Z"	.495	.47
3300	2200	3.0 "Z"	.495	.47

Treated yarns and cords for mechanical rubber goods—plus $.06.
Prices for special put-ups quoted on request.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in the continental United States except Alaska.

Tyrex*

Tyrex* Rayon Tire Yarn

Denier	Filament	Twist	Cones	Beams
1100	720	Z	.595	.57
1650	1100	Z	.535	.51
2200	1440	Z	.505	.48
3300	2200	Z	.505	.48

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

* Tyrex—Trademark of Tyrex Inc.

North American Rayon Corporation

Current Prices

Super Super High Strength Continuous Yarn Type 710		Cones	Beams
1100/720	1.6Z	.57	.57
1650/720/1100	2.0Z	.51	.51

Tire Cord Fabrics

Super Super High Strength Type 710	Rolls
1100/720	.69
1650/720	.60

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.
Prices are subject to change without notice.

CELLULOSIC STAPLE & TOW

ACETATE

Celanese Fibers Company

Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)

Celanese Acetate Staple

3, 5.5 & 8 Denier
(Regular Crimp, Type HC, Type D) .... $.36

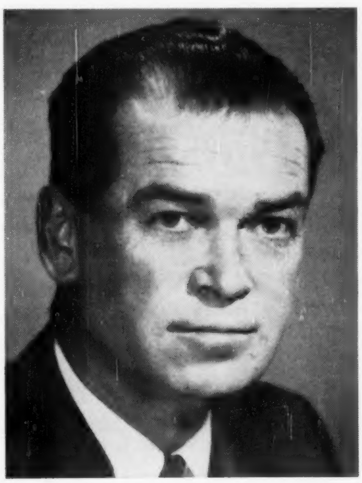
People in the News

Beale J. Faucette has been named full time sales consultant for Scott & Williams, Inc. In other promotions, **William O. McMillan**

Faucette

was appointed vice president in charge of sales, and **Stanley R. Shelmire** and **John Ross** appointed assistant vice presidents in charge of research and engineering.

Bjorn F. Benson has been named manager of tire technical service for Allied Chemical's National Aniline Division fiber marketing department.



Benson

C. E. Davis has been named representative for Whitinsville Spinning Ring Co. for Georgia, Alabama, Tennessee and part of South Carolina. He succeeds **Lanier Williams** who has been reassigned to cover North Carolina, part of South Carolina and Virginia.

Allen W. Stoner has been appointed manager of the synthetic fiber research department at United States Rubber Co.'s Wayne, N. J., Research Center. He succeeds **Clide I. Carr,** recently named manager of the elastomers research department.

Walter Imboden has been made chief engineer of Textile Machine Works.

Kenneth C. Laughlin has been appointed assistant to the director –research and development, fibers, of Allied Chemical's National Aniline Division.

George I. Rounds has been appointed director of field operations for Tyrex, Inc.

William F. Moons has been appointed senior credit executive in charge of retail credits for Iselin-Jefferson Financial Co.

Moons

Dr. Aimison Jonnard has been appointed vice president-planning of Celanese Chemical Co. He succeeds **Robert L. Mitchell,** recently named a vice president of Celanese International Corp.

David Van Sluyters has been appointed assistant to the marketing manager of Stanford Engineering Co.

Burke M. McConnell has been named vice president in charge of manmade fibers purchasing for Burlington Industries, Inc. He succeeds **C. L. Stafford, Jr.,** now area director for Burlington Tricot Fabrics Co. and Cheraw Weaving Mill.

Eric B. Norman has been appointed general sales manager of H. W. Butterworth & Sons Co.

2, 12 & 17 Denier	
(Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5 & 8 Denier	.35
Type F—12 & 17 Denier	.36
Type K—(Available under Celanese License Agreement)	.39
⅝" to ⅞" length (All Deniers)	.03 (Premium)
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	$.37
2, 12 & 17 Denier	.38
35 Denier	.40
35 Denier Flat Filament Acetate Tow	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point.)

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

RAYON

American Viscose Corp. Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .28
"Viscose 22"	.28
1.25 Denier	.31
All Other Deniers	.28
Hi-Crimp	.28
Bleached Crimp	
1.5, 3.0 Denier	.315
Smooth	
8.0 & 15.0 Denier Smooth	.30
22.0 Denier	.32
Bleached	.33
Extra Strength	
0.75 Denier	.40
1.0 Denier	.35
XL	
1.0 Denier	.40
1.5, 3.0 Denier	.37
XLI	.34
Fiber 40	
1.0 Denier	.43
1.5 Denier	.40

Spun Dyed Black Staple

1.5, 3.0, 5.5 Denier	.35
15.0 Denier crimped	.38

Prices of other colors on request.

Tow

1.5, 3.0, 5.5 Denier	.35
9.0 Denier	.37
15.0, 20.0 Denier	.38
Color spun black tow	.42

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective April 1, 1960

Rayon Staple

Regular Crimp

	Brt.	Dull
1.5 and 3 denier	$ .27	$ .27

High Crimp

3.0 denier	.27	.27
4.5 denier	.27	
6.5 denier	.27	.27
8 denier	.27	
15 denier	.27	.27

Celanese Fibers Company

Effective May 1, 1959

Rayon Tow

	Bright & Dull
1.5, 3, 5.5 D.P.F.	.35
Total denier 200,000	
8 D.P.F.	.37
Total denier 207,000	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Rayon Staple

	Bright	Dull
Regular Rayon Staple Fiber	$.27	$.27

Crimped Rayon Staple

High Crimped Rayon Staple Fiber	$.27	$.27

Coloray® Solution Dyed Rayon Staple

Color	Price per lb.
Black	$.35
Oyster	$.36
Silver Grey	$.41
Mocha	$.41
Tan	$.41
Medium Brown	$.41
Pu[illegible]kin	$.41
Aqu[illegible]	$.42
Rose	$.42
Dawn Pink	$.42
Ecru	$.42
Dark Brown	$.42
Gold	$.45
Lilac	$.45
Slate Grey	$.45
Sulphur	$.46
Nugget	$.46
Light Blue	$.46
Crystal Blue	$.47
Apple Green	$.47
Sage	$.47
Peacock Blue	$.48
Medium Blue	$.50
Indian Yellow	$.51
Dark Blue	$.51
Hunter Green	$.51
Turquoise	$.52
Malachite Green	$.53
Red	$.58

In addition to the above, Black is also available in:

1½ den. 1⅛"	5½ den. 3"
3 den. 1⅛"	5½ den. 6"
3 den. 1-9/16"	

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

Corval® Cross Linked Rayon

Man-made, cross-linked, regular or crimped cellulosic staple, semi-dull and dull .... $.37 per lb.

Topel® Cross-Linked Rayon

Man-made, cross-linked, cellulosic staple, semi-dull and dull .... $.37 per lb

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

Div. Bigelow-Sanford, Inc.

Rayon Staple

Effective September 22, 1961

Regular	
1.5 & 3.0 denier Bright & Dull, 1-9/16", 2"	.27
White (Crimped)	
8 denier 3" Bright	.27
15 denier 3" Bright	.27
15 denier 3" Dull	.27

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	.38	.38	....
Sandalwood	.38	.38	....
Nutria	.38	.38	....
Sea Green	.38	.38	....
Mint Green	.38	.38	....
Champagne	.38	.38	....
Midnight Black	.38	....	.38
Gold	.38	.38	....
Turquoise	.38	.38	....
Melon	.38	.38	....
Capri Blue	.38	.38	....
Charcoal Grey	.38	.38	....
Coco	.38	.38	....
Sable	.38	....	.38
Tangerine	.59	....	.59
Chinese Red	.59		.59
Larkspur Blue	.38	.38	....
Royal Blue	.59		.59
Lemon Peel	.48	.48	....
Kelly Green	.45	.45	....
Bitter Green	.59	....	.59
Brazil	....	.38	
Redwood	....		.38
Frost Green	....	.38	....
Mist Grey	....	.38	....
Medium Brown	....	.38	....
Dark Brown	....		.38
Woodtone	....	.38	....
Antique Gold	....	.38	....
Light Turquoise	....	.38	....
Hunter Green	....	.38	....

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

"Zantrel Polynosic" Rayon

Effective August 14, 1959

Man-made, cellulosic staple.

Semi-Bright, 1 denier, 1 916/"	$.45 per lb.
1½ denier, 1¼" and 1 9/16"	.42 per lb.
3 denier, 1 9/16" and 2"	.42 per lb.

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

Rayon Staple

Super High Tenacity	Bright
No. 1 (Unshrunk)	
1, 1.5 & 2.3 deniers	.40
No. 2 (Preshrunk)	
1, 1.5 & 3 deniers	.40

Rayon Tow

Tow Yarns for Tow Breaking	Bright No Twist Tow Tubes
4400/2934	$.45
6000/2934	.45
Tow Yarns for Ribbon	**Bright No Twist Tubes**
1100/480/960	.60
1650/720/1100	.56
1800/720/960	.54
2000/1466	.52
2200/960	.52
3000/960/1466/2934	.47½
3300/1466/2934	.47½
4400/2000/2934	.47½
6000/2934	.47½
6600/2000/2934	.47½

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

*Arnel Staple and Tow

	Bright & Dull
Arnel Triacetate Staple	
2.5 Individual Denier	$.55
5.0 Individual Denier	.55
Arnel Triacetate Tow	
2.5 Individual Denier 114,000 Total Denier	$.60
5.0 Individual Denier 90,000 Total Denier or 180,000 Total Denier	.60

Packaged on Ball Warps

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

* Registered Trademark of Celanese Corp. of America.

NON CELLULOSIC YARN

NYLON

Allied Chemical Corporation

Nylon Filament Yarn Prices

Effective September 15, 1961

Denier	Filament	Turn/ In.	Twist	Type**	Package	1st Grade Price/ Lb.	2nd Grade Price/ Lb.
140	16	1½	Z	BW	Cones*	$1.60	$1.55
140	16	1½	Z	BW	Beams	1.65	....
200	16	1½	Z	BW	Cones*	1.49	1.44
200	16	1½	Z	BW	Beams	1.54	....
210	32	1	Z	HBW	Bobbins	1.49	1.44
210	32	1	Z	HBW	Beams	1.54	....
420	64	½	Z	HBT	Bobbins	1.39	1.29
420	64	½	Z	HBT	Beams	1.44	....
840	136	½	Z	B	Al. Tubes	.94	.92
840	136	½	Z	B	Beams	.92	....
840	136	½	Z	HBW	Al. Tubes	.94	.92
840	136	½	Z	HBW	Beams	.92	....
840	136	½	Z	HBW	Cones* Cordage Grade	.92	....
840	136	½	Z	HBT	Al. Tubes	.94	.92
840	136	½	Z	HBT	Beams	.92	....
1050	70	½	Z	SD	Al. Tubes	1.15	1.05
1260	204	½	Z	HBT	Al. Tubes	.94	.92
1260	204	½	Z	HBT	Beams	.92	....
1680	272	½	Z	HBT	Al. Tubes	.94	.90
1680	272	½	Z	HBT	Beams	.92	....
2100	140	½	Z	SD	Al. Tubes	1.11	1.01
2100	408	0	O	HB	Paper Tubes*	.97	.95
2500	408	0	O	HB	Paper Tubes*	.97	.95
3360	544	0	O	HB	Paper Tubes*	.96	.94
4200	680	0	O	HB	Paper Tubes*	.96	.94
5000	816	0	O	HB	Paper Tubes*	.96	.94
5800	952	0	O	HB	Paper Tubes*	.96	.94
7500	1224	0	O	HB	Paper Tubes*	.95	.93
10000	1632	0	O	HB	Paper Tubes*	.95	.93
15000	2448	0	O	HB	Paper Tubes*	.95	.93

Bobbins are invoiced at 45¢ each.

Aluminum Tubes are invoiced at 40¢ each.

Beams are invoiced at $220.00.

Cradles for beams are invoiced at $53.00.

B— Bright.

H— High Tenacity.

M— Modified Cross Section.

SD—Semi-Dull.

T— Heat Stabilized, Golden.

W— Heat and Light Stabilized, White.

*Paper Tubes and Cones non-returnable, no charge.

**Type is used to describe luster and tenacity.

Twisted Heavy Yarn:

6 cents additional per pound for 1 turn.

2 cents additional per pound for each additional ½ turn.

Maximum twist—3½ turns.

Terms—Net 30 days.

Price subject to change without notice.

All prices quoted F.O.B. shipping point. Minimum transportation charges allowed and prepaid in Continental U. S. excluding Alaska.

American Enka Corporation

Enka Nylon Prices

Effective November 17, 1961

Den./Fil.	Luster	Twist	Package	Price per Pound Standard	Price per Pound Sub-Standard
15/1	SD-D	0.5Z	Pirns	$3.89	$3.69
15/1	SD-D	0.5Z	Spools	4.00	....
20/1	SD	0.5Z	Pirns	3.53	3.30
20/3	SD	0.5Z	Pirns	2.91	2.61
20/3	SD	0.5Z	Spools	3.02	....
20/6	SD	0.5Z	Pirns	2.91	2.61
20/6	SD	0.5Z	Spools	3.02	....
20/6	D	0.5Z	Pirns	2.96	2.66
20/6	D	0.5Z	Spools	3.07	....
30/1	SD	0.5Z	Pirns	4.13	3.93
30/3	SD	0.5Z	Pirns	2.36	2.21
30/3	SD	0.5Z	Spools	2.46	....
30/3	SD-Enkalure*	0.5Z	Pirns	2.46	2.31
30/6	SD	0.5Z	Pirns	2.36	2.21
30/6	SD	0.5Z	Spools	2.46	....
30/6	D	0.5Z	Pirns	2.41	2.26
30/6	D	0.5Z	Spools	2.51	....
40/8-13	SD	0.5Z	Pirns	2.01	1.91
40/8-13	SD	0.5Z	Spools	2.11	....
40/8	SD-B de B*	0.5Z	Pirns	2.10	2.00
40/13	D	0.5Z	Pirns	2.06	1.96
40/13	D	0.5Z	Spools	2.16	....
50/8	SD	0.5Z	Pirns	1.91	1.76
50/13	B-SD	0.5Z	Pirns	1.91	1.76
50/13	B-SD	0.5Z	Spools	2.01	....
50/13	SD-B de B*	0.5Z	Pirns	2.00	1.85
50/13	SD-B de B*	0.5Z	Spools	2.10	....
60/16-32	SD	0.5Z	Pirns	1.82	1.65
70/16-32	B-SD	0.5Z	Pirns	1.71	1.66
70/24	SD	0.5Z	Pirns	1.71	1.66
70/32	SD-B de B*	0.5Z	Pirns	1.80	1.75
100/32	SD	0.5Z	Pirns	1.65	1.60
100/32	SB	1.5Z	Pirns	1.65	1.60
100/32	SD-B de B*	0.5Z	Pirns	1.74	1.69
140/17	B-Enkalure*	1.5Z	Pirns	1.65	1.60
140/24	B-SB	1.5Z	Cones	1.60	1.55
140/24	B-SB	1.5Z	Beams	1.65	....
140/32-64	SD	0.5Z	Pirns	1.60	1.55
200/16	B	1.5Z	Cones	1.49	1.44
200/16	B	1.5Z	Beams	1.54	....
200/16-32	B	5.0Z	Cones	1.59	1.54
200/17	B-Enkalure*	1.5Z	Cones	1.59	1.54
200/32	B	1.0Z	Cones	1.49	1.44
200/32	B	1.0Z	Beams	1.54	....
200/32	SB	1.5Z	Cones	1.49	1.44
200/32	SB	1.5Z	Beams	1.54	....
200/32	SD-B de B*	0.5Z	Cones	1.58	1.53
210/32	BHT	0.5Z	Cones	1.49	1.44
210/32	BHT	0.5Z	Beams	1.54	....
260/16-32	B	0.5Z	Cones	1.49	1.39
260/16	BHT	1.0Z	Cones	1.49	1.39
260/16	BHT	1.0Z	Beams	1.54	....
260/17	B-Enkalure*	1.5Z	Cones	1.59	1.49
400/64	B	0.5Z	Cones	1.39	1.29
400/64	B	4.0Z	Cones	1.49	1.39
420/64	BHT	0.5Z	Cones	1.39	1.29
420/64	BHT	1.0Z	Cones	1.39	1.29
420/64	BHT	0.5Z	Beams	1.44	....
420/64	BHT	1.0Z	Beams	1.44	....
520/32	BHT	0.5Z	Cones	1.39	1.29
520/32	BHT	0.5Z	Beams	1.44	....
520/34	B-Enkalure*	0.5Z	Cones	1.49	1.39
840/56	BHT	0.5Z	Cones	.95	.92
840/56	BHT	0.5Z	Beams	.93	....
840/140	BHT	0.5Z	Cones	.94	.92
840/140	BHT	0.5Z	Beams	.92	....
1040/68	B-Enkalure*	0.5Z	Pirns & Cones	1.30	1.20
1040/68	SB-Enkatron*	0.5Z	Pirns	1.30	1.20
1050/140	BHT	0.5Z	Cones	.94	.92
1230/68	SB-Enkatron*	0.5Z	Pirns	1.30	1.20
1680/112	BHT	0.5Z	Cones	.95	.92
1680/280	BHT	0.5Z	Cones	.94	.92
1680/280	BHT	0.5Z	Beams	.92	....
2080/136	SB-Enkatron*	0.5Z	Pirns	1.26	1.16

* Enka Trademark.

* Blanc de Blancs = Enka Trademark White of Whites.

** Enka Trademark.

* Luster: B—Bright, H—High Tenacity, T—Heat Stabilized, SD—Semi-Dull, D—Dull, SB—Semi-Bright.

Beams, beam racks, returnable cake covers, and pirns remain the property of American Enka Corporation and are to be returned as soon as possible to the plant from which received, freight charges collect. Beams, beam racks, and returnable cake covers lost or not returned in usable condition within 90 days from date of shipment will be invoiced to the purchaser at seller's cost. A deposit on pirns will be included in the invoice at the time of shipment and will be refunded upon return of pirns in usable condition. Pirns invoiced at 25¢ or 45¢ each, depending on type.

Terms: Net 30 days from date of invoice. Minimum common carrier transportation charges will be prepaid and absorbed to first destination in the continental limits of the United States excluding Alaska and Hawaii. In prepaying transportation charges, seller reserves the right to select carrier used.

All prices subject to change without notice.

The Chemstrand Corp.

Current Prices Effective January 1, 1960

	Denier	Filament	Twist	Type	Package	Standard Price/ lb.	Second Price/ lb.
	10	1	O	SD	Bobbins	$7.16	$6.56
*	15	1	O	RSD	Bobbins	3.89	3.69
	15	1	O	RSD	Spools	4.00	....
	15	1	O	Dull	Bobbins	3.89	3.69
	15	1	O	Dull	Spools	4.00	....
	20	7	Z	RSD	Bobbins	2.91	2.61
	20	7	Z	RSD	Spools	3.02	....
*	30	10	Z	RSD	Bobbins	2.36	2.21
*	30	26	Z	RSD	Bobbins	2.49	2.21
*	40	10	Z	RSD	Bobbins	2.01	1.91
*	40	13	Z	RSD	Bobbins	2.01	1.91
	40	13	Z	RSD	Spools	2.11	....
	40	13	O	RSD	Draw Wind	2.01	1.91
*	40	13	Z	Dull	Bobbins	2.06	1.96
	40	13	Z	Dull	Spools	2.16	....
	40	13	O	Dull	Draw Wind	2.06	1.96
*	50	17	Z	RSD	Bobbins	1.91	1.76
	50	17	O	RSD	Draw Wind	1.91	1.76
*	50	17	Z	Brt.	Bobbins	1.91	1.76
	70	17		RSD	Bobbins	1.71	1.66
*	70	20	Z	RSD	Bobbins	1.71	1.66
*	70	34	Z	RSD & SD	Bobbins	1.71	1.66
	70	34	O	RSD & SD	Draw Wind	1.71	1.66
	70	34	Z	Brt.	Bobbins	1.71	1.66
	70	34	O	Brt.	Draw Wind	1.71	1.66
	70	34	Z	HB	Bobbins	1.76	1.66
	70	34	O	HB	Bobbins	1.76	1.66
	70	34	Z	RB	Bobbins	1.71	1.66
	100	26	Z	RSD	Bobbins	1.65	1.60
	100	34	Z	RSD	Bobbins	1.65	1.60
	100	34	Z	HB	Bobbins	1.70	1.60

King Cotton's Ransom

(Continued from page 19)

fiber in a decent package and at a reasonable price."

Robison, in summing up, called on the textile industry to assume responsibility for convincing Congress that the cotton price support program should be ended.

In our opinion, Jim Robison is to be congratulated for so convincingly stating the case against the foolish and unnecessary cotton price support program. It is to be hoped that Congress will be moved by his persuasive arguments. We urge everyone eager to achieve a prosperous future for the textile industry to do their utmost to bring to the attention of Congress and the public at large the need to take the reforming action recommended by Robison. His talk has been printed in a booklet; those who want copies may receive them, through his courtesy, by writing to this magazine. It is our earnest hope and recommendation that every textile management man will ask for a copy, read it, and circulate it among his business friends in and out of textiles.

A. H. McCullough

Carl C. Mattman, Jr.

Carl C. Mattmann, Jr., died last month after a short illness. Recognized as one of the earliest fabric development technologists in the manmade fiber industry, he was a long and devoted member of the American Association for Textile Technology, serving as program chairman, a director and later as its president.

Following in the family tradition of textiles, he graduated from the Philadelphia Textile School in 1916 and joined the family firm, Astoria Silk Works, Astoria, L. I. He later formed the Mattmann Silk Mills which became a victim of the bleak days of the late 1920's. He then turned to the growing rayon industry and was successful in developing fabrics of filament rayon for Industrial Rayon Corp. and American Enka Corp. He also helped with development of the first spun rayon yarns made in the United States by Fitchburg Yarn Co.

He later joined Ashton M. Tenney in the development and sale of acetate yarns and fibers made by Tennessee Eastman Corp. After the war Mattmann left Tenney to head the fabric development department of Textron, Inc. In more recent years he did fiber and fabric development work for the Virginia-Carolina Chemical Co. and B. F. Goodrich Chemical Co. During his long professional career, he maintained a close relationship with the Philadelphia Textile Institute and served on its board. He is survived by his wife, the former Ellen Richards, a daughter, Mrs. Mary Paterson, and two grandchildren.

140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	Brt.	Bobbins	1.60	1.55
• 200	34	Z	Brt.	Bobbins	1.49	1.44
200	34	O	Brt.	Draw Wind	1.49	1.44
200	34	Z	Brt.	Spools	1.54	....
• 200	68	Z	RSD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	O	HB	Draw Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
210	34	Z	RHB	Bobbins	1.49	1.44
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Beams	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
420	68	Z	RHB	Bobbins	1.39	1.29
520	34	Z	HB	Bobbins	1.39	1.29
720	140	Z	RHB	Beams	.99	....
840	140	Z	HB	Tubes	.94	.92
840	140	Z	HB	Beams	.92	.90
840	140	Z	HB	Cones	.95	.93
840	140	Z	RHB	Tubes	.94	.92
840	140	Z	RHB	Beams	.92	.90
840	140	Z	RHB	Cones	.95	.93
840	140	Z	HB	Paper Tubes	.94	.92
840	140	Z	RHB	Paper Tubes	.94	.92
840	140	Z	RHB	Textile Grade—W.W.	1.06	.92
840	140	Z	HB & RHB	Spools—Tire Textiles	1.00	....
840	140	Z	RHB	Raschel Spools	1.03	....
1050	170	Z	RHB	Tubes	.94	.92
1680	280	Z	RHB	Tubes	.94	.90
1680	280	Z	RHB	Beams	.92	....
1680	280	Z	RHB	Cones	.95	.91
1680				Spools	.99	.91

Cumuloft®

520	34	Z	RB	Tubes	2.05	....
1040	68	Z	RB	Tubes	1.74	....
1230	68	Z	RSD	Paper Tubes	1.53	....
2080	136	Z	RB	Tubes	1.66	....
3690	204	S	RSD	Cones	1.47	....

Cadon™

15	1	O	Brt.	Bobbins	4.90	4.70
15	1	O	Brt.	Spools	5.01	....
70	34	Z	RSD	Bobbins	1.81	....
200	34	Z	RB	Bobbins	1.54	....
520	34	Z	RB	Bobbins	1.44	1.34
1040	68	Z	RB & RSD	Tubes	1.30	1.20
1230	68	Z	RSD	Tubes	1.30	1.20
2080	136	Z	RB	Tubes	1.26	....

• These counts also available in Warp Wind package at price shown for Bobbins.

* *Types*: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $95.00, $110.00, and $115.00, depending on type; and beams and crates for beams are invoiced at $220.00 and $25.00 respectively.

Prices subject to changes without notice.

Freight prepaid within Continental United States and Puerto Rico.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	First Grade	Second Grade
7-1	0	200/280	Bobbin	$8.05	$7.40
10-1	0	200/280	Bobbin	7.16	6.56
12-1	0	200/280	Bobbin	6.35	5.85
15-1	0	90	Bobbin	4.90	....
15-1	0	90	Kntg. Beam	5.01	....
15-1	0	200	Kntg. Beam	4.00	....
15-1	0	200/280	Bobbin	3.89	3.69
15-1	0	680	Kntg. Beam	4.00	....
15-1	0	680	Bobbin	3.89	3.69
20-1	0	200/280	Bobbin	4.03	3.68
30-1	0	200	Bobbin	4.13	....
40-1	0	100	Bobbin	4.03	3.75
14-2	0.2Z	200/280	Bobbin	6.72	6.12
17-2	0.2Z	200/280	Bobbin	5.96	5.41
20-2	0.2Z	200/280	Bobbin	4.71	4.27
15-3	0.2Z	200/280	Bobbin	5.19	4.69
21-3	0.2Z	200/280	Bobbin	4.70	4.27
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Kntg. Beam	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Kntg. Beam	3.07	....
20-17	0.5Z	280	Bobbin	3.51	....
20-17	0.5Z	280	Kntg. Beam	3.62	....
20-20	0.7Z	209	Bobbin	6.00	....
28-4	0.2Z	200	Bobbin	2.81	2.61
30-10	0	200	Drawwinder Tube	2.36	2.21
30-10	0.5Z	280	Bobbin	2.36	2.21
30-10	0.5Z	280	Kntg. Beam	2.46	....
30-10	0.5Z	300	Bobbin	2.51	2.36
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Kntg. Beam	2.51	....
30-26	0.5Z	280	Bobbin	2.49	2.21
30-26	0.5Z	280	Kntg. Beam	2.59	....
40-7	0.5Z	200/280	Bobbin	2.11	1.91
40-10	0.5Z	280	Bobbin	2.01	1.91
40-10	0.5Z	280	Kntg. Beam	2.11	....
40-13	0.5Z	200/280	Kntg. Beam	2.11	....
40-13	0.5Z	100/200/280	Bobbin	2.01	1.91
40-13	0	200	Drawwinder Tube	2.01	1.91
40-13	0.5Z	300/400/480	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.96
40-13	0.5Z	680	Kntg. Beam	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	280	Bobbin	2.11	1.76
50-17	0.5Z	100/200/280	Bobbin	1.91	1.76
50-17	0	200	Drawwinder Tube	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
50-17	0	685	Paper Tube	2.01	1.76
60-20	0.5Z	280/288	Bobbin	1.82	1.65
60-34	0.5Z	300	Bobbin	1.86	1.76
70-17	0.5Z	200/288	Bobbin	1.71	1.66
70-20	0.5Z	288	Bobbin	1.71	1.66
70-34	0.5Z	91	Bobbin	1.80	1.75
70-34	0.5Z	180/200	Bobbin	1.71	1.66
70-34	0	105/205	Paper Tube	1.71	1.66
70-34	0	100/200/285	Drawwinder Tube	1.71	1.66
70-34	0.5Z	280/288	Bobbin	1.71	1.66
70-34	0.5Z	300/680	Bobbin	1.76	1.66
70-34	0	680/685	Paper Tube	1.76	1.66
80-26	0.5Z	200/280	Bobbin	1.71	1.60
90-26	0.5Z	288	Bobbin	1.76	1.66
100-34	0.5Z	200/288	Bobbin	1.65	1.60
100-34	0	300	Drawwinder Tube	1.70	1.60
100-34	0.5Z	300/680	Bobbin	1.70	1.60
100-50	0.5Z	200/288	Bobbin	1.71	1.60
110-50	0.5Z	200	Bobbin	1.71	1.60
140-34	0.5Z	680	Bobbin	1.65	1.60
140-68	0.5Z	91	Bobbin	1.69	1.64
140-68	0.5Z	100/180/280	Bobbin	1.60	1.55
140-68	0	200	Drawwinder Tube	1.60	1.55
140-68	0.5Z	200/288	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
140-68	0.5Z	680	Bobbin	1.65	1.60
200-20	0.7Z	180	Bobbin	1.49	1.44
200-34	0	100	Drawwinder Tube	1.49	1.44
200-34	0.7Z	180/280	Bobbin	1.49	1.44
200-34	0	105	Paper Tube	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	100/200	Bobbin	1.56	1.46
210-34	0	300	Drawwinder Tube	1.49	1.44
210-34	0.7Z	300/330	Bobbin	1.49	1.44
210-34	0.7Z	300/330	Kntg/Section Beam	1.54	....
210-34	0	305	Paper Tube	1.49	1.44
260-17	1Z	300/380	Bobbin	1.49	1.39
400-68	0.7Z	180	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
420-68	1Z	300	Kntg/Section Beam	1.44	....
520-34	1Z	380	Bobbin	1.39	1.29
630-102	0.7Z	300	Bobbin	1.39	1.29
780-52	1Z	380	Bobbin	1.39	1.29
800-140	0.5Z	180	Bobbin	1.39	1.29
840-136	1Z	300	Bobbin	1.34	1.24
840-136	1Z	300	Kntg/Section Beam	1.39	....

Nylon Filament "Antron" Yarn Prices

20-7	0.5Z	560 Brt.	Bobbin	3.06	2.76
20-7	0.5Z	560 S.D.	Bobbin	3.06	2.76
30-10	0.5Z	560 S.D.	Bobbin	2.46	2.31
40-13	0.5Z	560 Dull	Bobbin	2.16	2.06
40-13	0.5Z	560 Mid-Dull	Bobbin	2.11	2.01
40-13	0.5Z	560 S.D.	Bobbin	2.11	2.01
40-13	0.5Z	560 Brt.	Bobbin	2.11	2.01
50-17	0.5Z	560 S.D.	Bobbin	2.01	1.86
70-34	0	565 Brt.	Paper Tube	1.81	1.76
70-34	0.5Z	560 Brt.	Bobbin	1.81	1.76
70-34	0	565 S.D.	Paper Tube	1.81	1.76
70-34	0.5Z	560 S.D.	Bobbin	1.81	1.76
70-34	0	560 S.D.	Drawwinder Tube	1.81	1.76
200-20	0.7Z	560 Brt.	Bobbin	1.54	1.49
200-34	0.7Z	560 S.D.	Bobbin	1.54	1.49
200-34	0	565 S.D.	Paper Tube	1.54	1.49
520-34	1Z	560 Brt.	Bobbin	1.44	1.34
780-52	1Z	560 Brt.	Bobbin	1.44	1.34

• Antron is DuPont's registered trademark for its trilobal multi-filament nylon yarn.

Color-Sealed Black Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	$2.71	$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-17	0.5Z	140/148	Bobbin	2.06	2.01
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140/148	Bobbin	2.00	1.95
200-20	0.7Z	140	Bobbin	1.84	1.79
200-34	0.7Z	140	Bobbin	1.84	1.79
260-20	1Z	140	Bobbin	1.84	1.79

INDUSTRIAL YARNS

Tire Quality

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
Type 714—Bright, high tenacity, Rotoset.					
840-140	0.5Z	300/700/702	Aluminum Tube	$.94	$.92
840-140	0.5Z	300/700/702	Beam	.92	....
840-140	0.5Z	300/700/702	Kntg Beam	1.00	....
1050-168	0.5Z	700	Beam	.92	....
1050-168	0.5Z	700	Alum. Tube	.94	.92
1680-280	0.5Z	700	Cone, Paper Tube	.95	.92
1260-210	0.5Z	700	Beam	.92	....
1680-280	0.5Z	700	Aluminum Tube	.94	.92
1680-280	0.5Z	700	Beam	.92	....
840-140	0.5Z	300/700/702	Cone, Paper Tube	.95	.92
Industrial Quality					
840-140	0.5Z	707	Cone, Pape Tube	.95	
2520-420	0	700	Paper Tube	.97	
3360-560	0	700	Paper Tube	.96	
5040-840	0	707	Paper Tube	.99	
5040-840	0	700	Paper Tube	.96	
7560-1260	0	707	Paper Tube	.98	
7560-1260	0	700	Paper Tube	.95	
10080-1680	0	707	Paper Tube	.98	
15120-2520	0	707	Paper Tube	.85	

These prices are subject to change without notice. Terms: Net 30 Days

Types

Type 90—Bright, normal tenacity, trilobal—cross section.
Type 91—Semidull, super white, normal tenacity, for intimate apparel use only.
Type 100—Bright, normal tenacity.
Type 105—Bright, normal tenacity, low shrinkage (5-7%).
Type 140—Bright, color-sealed, black, normal tenacity.
Type 148—Bright, color-sealed Black, normal tenacity, for texturing.
Type 180—Bright, normal tenacity, improved light durability and dye light fastness.
Type 200—Semidull, normal tenacity.
Type 205—Semidull, normal tenacity, low shrinkage (5-7%).
Type 209—Semidull, normal tenacity, improved light durability and dye light fastness. For electrical uses.
Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.
Type 285—Semidull, normal tenacity, low shrinkage, improved light durability, and dye light fastness.
Type 288—Semidull, normal tenacity, for texturing.
Type 300—Bright, high tenacity.
Type 305—Bright, high tenacity, low shrinkage (5-7%).
Type 330—Bright, high tenacity, more heat & light resistant.
Type 380—Bright, high tenacity, improved light durability and

Manchester Show

(Continued from Page 42)

L. A. Mitchell (Britain) exhibited a new Aero-Dyne dryer for circular knitted fabrics. With re-circulating hot air, the unit can handle all circular knit fabrics, opening the fabric into the circular form and setting the material into flat widths of the required dimension. With synthetic fiber fabrics it can handle up to 30 yards per minute.

A newly developed photo-cell feeding apparatus designed for use in a tentering, drying and heat setting unit was shown by Trockentechnik, Kurt Brueckner (West Germany). According to one member of the firm: "The unit is designed to transmit a variable speed to the chain rails according to the distance they have to move to follow the fabric selvage. Thus large distances are covered quickly, yet where the fabric selvage variation is small a slow movement results."

The exhibition generally was perhaps best summed up in the words of one visitor from New York: "Although there is not a great deal new in the way of knitting machines that wasn't shown at Atlantic City, (May, 1961) there is plenty of interesting stuff in associated equipment."

Celanese Makes Available Rare French Print Designs

A collection of early print designs of rare fabrics from the only museum in the world devoted entirely to textiles—Musee de l'Impression sur Etoffes, in Mulhouse, France—were exhibited in this country recently by Celanese Fibers Co. These patterns are being made available to converters on an exclusive basis as design inspiration for fabrics with Celanese fibers. The exhibit also included examples of different designs from the collection handprinted on new weaves created by the Celanese Fabric Development Program especially for the Musee group.

Key menswear manufacturers, meanwhile, have reported an unprecedented quantity sale of a blend of Fortrel polyester and cotton fabrics. Considerable yardage was purchased by Merrill Sharpe, Ltd., for use in men's swim trunks and Cabana sets for resort-spring. Other men's wear cutters who have ordered quantity yardage of the blend, called "Tapa Prints"—a Hawaiian motif—include: Cluett Peabody, and Roytex, Excello, and Ratner of California.

Celanese will salute Texas manufacturers of women's apparel in Spring, 1962. The market-wide promotion, revolving around Fortrel polyester fiber, will be backed by a multi-page section in the Southern edition of "Mademoiselle" for February, 1962.

New Propylene Plant Open

Officials of Montecatini of Italy and Novamont Corp., Montecatini's wholly-owned American manufacturing subsidiary, recently dedicated Novamont's Neal, W. Va., polypropylene operation and announced the plant was officially on stream. The plant can produce 30 million pounds annually of isotactic polypropylene for plastic applications.

Chemore Corp., general representative in the U.S. for Montecatini and Novamont, has moved to larger quarters at 100 E. 42nd St., New York, N. Y.

dye light fastness.

Type 400—Semidull, high tenacity.

Type 480—Semidull, high tenacity, improved light durability and dye light fastness.

Type 560—Luster as designated—Modified cross section. Improved light durability and dye light fastness.

Type 565—Luster as designated—Modified cross section, low shrinkage. Improved light durability and dye light fastness.

Type 680—Dull, normal tenacity.

Type 685—Dull, normal tenacity, low shrinkage (5-7%).

Type 700—Bright, high tenacity.

Type 702—Bright, high tenacity.

Type 707—Bright, high tenacity cordage yarn.

840-140	Rol	714	Beam	.92	....

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Following are invoiced as a separate item.

Bobbins—25 cents or 45 cents depending on type

Aluminum Tube—40¢ each

Draw Winder Tubes—$1.00

Industrial & Section Beams—$220.00 each

Racks for Industrial & Section Beams—$50.00 each

Tricot Beams—$95.00 or $250.00 each depending upon type

Racks for Tricot Beams—$70.00 or $130.00 each depending upon type

Raschel Beams—$85.00 or $100.00 each depending upon type

Racks for Raschel Beams—$70.00 each

Knitting (Tricot and Raschel) and Section Beams and Racks are billed at above prices if not returned within 180 days from date of invoice. Industrial beams and racks are billed if not returned within 60 days from date of invoice.

(Beams and Racks are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Package	Tubes 1st Gr.
30-14	0	Bright	55	Tube	$2.60
30-20	0	Semidull	56	Tube	2.60
40-27	0	Semidull	56	Tube	2.35
40-27	0	Bright	55	Tube	2.35
40-27	0	Dull	57	Tube	2.40
70-34	0	Semidull	56	Tube	1.97
70-14	0	Bright	55	Tube	1.97
70-34	0	Bright	55	Tube	1.97
70-34	0	Dull	57	Tube	2.02
100-34	0	Semidull	56	Tube	1.90
140-28	0	Bright	55	Tube	1.85
150-34	0	Semidull	56	Tube	1.85
220-50	0	Bright	51	Tube	1.76
250-50	0	Bright	55	Tube	1.76
1100-250	0	Bright	51	Core	1.50
1100-250	0	Bright	52	Core	1.50
1100-250	Ro2	Bright	52	Core	1.50
1100-250	Ro2	Bright	52	Beam	1.50

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

Yarn Types

• Type:

Type 51—Bright, high tenacity.

Type 52—Bright, high tenacity.

Type 55—Bright, normal tenacity.

Type 56—Semidull, normal tenacity.

Type 57—Dull, normal tenacity.

Tubes are invoiced as a separate item at $.70 each.

Industrial beams and cradles are billed if not returned within 60 days from date of invoice. They are then billed as separate items at $220.00 per beam and $50.00 per cradle and are returnable for credit.

*"DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN

The National Plastics Products Company—Fibers Division Odenton, Maryland

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. i.	Natural	Colors
750/20*	3	1.75	1.80

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

American Cyanamid Co. Fibers Division

Effective Date: September 21, 1961

Cyanamid Acrylic Staple

	1st Grade Price (per pound)
2.0 Denier Bright and Semi-Dull	$1.18
3.0 Denier Bright and Semi-Dull	1.18
5.0 Denier Bright and Semi-Dull	1.14
15.0 Denier Bright and Semi-Dull	.745

Staple Lengths: 1½", 2", 2½", 3", 3½", 4", 4½".

Type WM—Designed for the woolen spinning system and is a blend of deniers (average 4) and length .... .94

Type BC—Designed for blending with cellulosics and is 2 or 3 denier 1½" semi-dull regular staple .... .96

Information provided on request for Deniers, Lengths and Lusters not listed above.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

"Acrilan"*

Current Prices Effective January 1, 1961

		Regular Acrilan		Acrilan 16	
Denier	Type	"A" Qual.	2nd Qual.	"A" Qual.	2nd Qual.
1.0	Staple	$	$	$1.28	$ ....
2.0	Staple	1.18	1.03	1.18	1.03
2.0	Tow	1.18	1.03	1.18	1.03
2.5	Hi-Bulk Staple	1.18	1.03	1.18	1.03
2.5	Hi-Bulk Tow	1.18	1.03	1.18	1.03
3.0	Staple	1.18	1.03	1.18	1.03
3.0	Tow	1.18	1.03	1.22	1.03
5.0	Staple	1.14	1.03	1.14	1.03
5.0	Tow	1.14	1.03	1.14	1.03
8.0	Staple	1.14	1.03	1.14	1.03
8.0	Tow	1.14	1.03	1.14	1.03
12.0	Tow	.76	....	.76	....
12.5	Staple	.745	....	.745	....
15.0	Staple	.745	....	.745	....
15.0	Tow	.76	....	.76	....

Staple and Tow available in Bright and Semi-Dull lusters.

Acrilan Spectran™

		Dark	Light
2.5	Staple	1.39	1.29
3.0	Staple	1.39	1.29
3.0	Tow	1.44	1.34
4.0	Staple (Hi Shrink)	1.29	1.29

Acrilan Solution-Dyed Colors

REGULAR COLORS

Dark—Jet Black, Midnight Blue, Afghan Brown, Gunmetal Grey, Dark Moss, Pacific Blue, Erin Green.

Light—Antelope, Old Gold, Blonde Beige, Cadet Grey, Dolphin Blue, Green Mist.

HI SHRINK COLORS

Dark—Jet Black, Gunmetal Grey, Afghan Brown.

Light—Antelope, Blonde Beige, Cadet Grey.

SPECIAL COLORS

Jockey Red	$1.44
Cardinal Red	1.44
Sunflower Yellow	1.44

Staple and tow available in bright lusters only.

Fiberfill	....	....	1.01	....
Types 77, 88 and 89 Staple	....	....	.94	....
Type 87	....	....	.96	....

TERMS: Net 30 Days.

F.O.B. shipping point, freight prepaid: seller to select and pay transportation charges of carrier to points within the continental limits of the United States, excluding Alaska.

* "Acrilan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department Current Prices

"Zefran"* Acrylic Staple

Type 1207	Staple Length	
2.0 Denier	1½", 2", 3"	$1.24
3.0 Denier	1½", 2", 2½", 3", 4½"	1.18

100% Blends of ZEFRAN 1207 Acrylic fiber (For the Woolen System)

Type W-7 (average denier of about 2.5) .... $.99

Type W-9 (average denier of about 4.5) .... .94

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* Registered trademark of The Dow Chemical Co.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Orlon"* Acrylic Staple & Tow

Type 42	Staple Length	Tow Blds.	1st Grade
2.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.18
3.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.18
3.0 Denier Color-sealed Black	1¼, 1½, 2, 2½, 3, 4½	470M	1.43
6.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.14
6.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.39
4.5 Denier Semidull & Bright	1⅛, 1¼, 2, 2½, 3, 4½	470M	1.14
10.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.14
10.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.39

High Shrinkage Staple price as Regular Staple

Type 44 Staple & Tow

(High-Shrinkage Staple & Tow Prices Same as Regular Staple & Tow)

These products are acid-dyeable and permit piece-dye styling when blended with Type 42.

3.0 Semidull	1½", 3" & 4½"	470M	$1.23
6.0 Semidull	1½", 3" & 4½"	470M	1.19
Type 36 Carpet Staple	Semidull—3" & 4"		$.79
Type 38 Staple	Semidull & Bright		$.96

This product is designed for the pile-fabric trade and is a mixture of deniers (average about 3.0), 1¼" staple.

Type 39 Semidull $.94

This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A Semidull $.96

This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.5) with a variable cut length.

Type 39B Semidull $.94

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

Type 72 Semidull $.96

This product is designed as a blending staple with cotton for skin-contact apparel type of fabrics and is a 1.5 denier, 1½" semidull whitened staple.

Type 75 Semidull $.96

This product is designed for *Cotton/Rayon System Spinning* and is 2.5 denier, 1½" semidull regular shrinkage staple.

"ORLON SAYELLE"**

Type 21—Semidull

3.0 denier variable (2½" to 5" average 3¾") staple $1.38

3.0 denier tow 470M 1.38

6.0 denier variable (2½" to 5" average 3¾") staple 1.34

6.0 denier tow 470M 1.34

Type 24

3.0 denier semidull variable (1" to 5" average 3") staple $1.38

MANHATTAN'S GROWTH

(Continued from Page 22)

60% of the company's shirt volume. And textile people will regard as significant that more than 70% of Manhattan's volume is on fabrics and finishes unknown ten years ago.

These achievements could not have been realized without the skill and facilities that operate at Manhattan's research and development laboratory in Paterson. It is equipped to do every conceivable textile test and is manned by able technicians. The director is William S. Woodson, Jr. Working closely with Woodson is Harry Martin, company expert in textile design.

At Paterson also many devices for better manufacturing have been invented. A number of them have become standard equipment in the textile industries. One example is multiple button sewing, by which all buttons on a shirt are sewed on simultaneously. As a result, an operator who previously tended two button-sewing machines can now work five at the same time. Automatic stacking equipment is another example.

The newest creation at Manhattan's research laboratory, the product of Woodson's ability, is a sewing thread which elongates when wet and thus avoids seam puckering. Although a patent has been obtained, the thread is still considered experimental and therefore has not yet been farmed out.

Quality Control Is Strict

The Paterson laboratory is also the place where an especially rigorous quality control program is carried on. As every new Manhattan garment must be thoroughly reliable before it goes into production, so too must it continue to meet the highest standards once it is in production. As Woodson explains, the consumer buys a finished garment and Manhattan is concerned with every feature of this garment, including buttons, seams and cuffs. Moreover, every purchase of needed material must conform to rigid quality standards. Often six or seven samples from competing suppliers are examined and tested before an order is placed. In addition, plants and mills of suppliers are inspected to be sure equipment meets Manhattan's requirements.

The technological foundation of Manhattan's way of business is summed up by Stengel this way: "Ten years ago, the shirt business was very staple, conservative and easy. There were fewer collar styles and fewer fabrics. Technological improvements have changed all that. It is providing the new plusses-color, fabric, finish, packaging—that mean fashion and therefore more excitement. We have taken the position of being fashion leaders."

It is this marketing of fashion based on technology which has carried the shirt maker of 1857 into men's furnishings to produce pajamas, underwear, swimwear, sweaters, walk shorts and handkershiefs. For these items, new styles are designed twice a year.

The merchandise diversification in which Manhattan takes special pride is the women's sportswear of the Lady Manhattan Division, which was formed eight years ago. A directors' meeting in 1953 discussed the possibilities of entering boys' wear. Stengel opposed this move in the belief that such a move was not in Manhattan's best interests. Instead, he saw the need for well-styled quality shirts for women, shirts that would have the man-tailoring women ap-

(Continued on Page 73)

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "ORLON" is Dupont's Registered Trade-mark for its Acrylic Fiber.

** "ORLON SAYELLE" is Dupont's Registered Trade-mark for its bi-component Acrylic fiber.

MODACRYLIC

Eastman Chemical Products, Inc.
Tennessee Eastman Co.

Current

"Verel"* Staple and Tow

All items available in both bright and dull luster in standard lengths

Denier	Type A	Type B	Type C	Type D	Type III	Type HB
3	.75	....	....	....	$0.75	$0.75
5	.75	$0.75	....	....	....	.75
8	.75	.75	....	....	....	.75
12	....	.70	$0.70	$0.70	....	.70
16	.70	.70	.70	.70	....	.70
24	....	....	.75	....	....	....

Type A—High crimp with good crimp retention
Type B—High crimp—less permanent than Type A
Type C—Medium crimp—nonpermanent—crimp easily removed
Type D—Low crimp—completely nonpermanent—fiber must be stabilized in dyeing
Type HB—Very high, very permanent crimp
Type III—Controlled shrinkage fiber

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept. Effective November 1, 1961

Dynel Staple & Tow

Regular Dynel	
2 Denier, Staple and Tow	$ .85 per lb.
3, 6, and 24 Denier, Staple and Tow	.75 per lb.
12 Denier, Staple and Tow	.70 per lb.
15 denier Carpet, Staple and Tow	.65 per lb.
3 Denier, High Shrinkage, Staple and Tow	.95 per lb.
Dynel Spun with Colors:	
Blond, Pewter, Gray, Brown, Charcoal, Black	
3 and 6 Denier, Staple and Tow	$1.05 per lb.
3 Denier, High Shrinkage, Staple and Tow	1.30 per lb.

Prices are quoted F.O.B. shipping point, freight prepaid our route, within continental limits United States, excluding Alaska.

Aeress Yarn

Denier & Filament	Turns/Inch & Twist	Package	Price
75-30	1.0 Z	Paper Tube	$2.10
100-40	1.0 Z	Paper Tube	2.05
150-60	1.0 Z	Paper Tube	2.00
200-80	1.0 Z	Paper Tube	1.95

Prices are quoted F.O.B. shipping point, frieght prepaid our route, within continental limits of United States, excluding Alaska and Hawaii.

NYLON

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1⅛"—4½"	None made	$1.24	$1.10
1.5	201	1⅛"—4½"	None made	1.26	1.12
2.3	420	1½" only	None made	1.24	1.10
3.0	231	1⅛"—4½"	470M	1.26	1.12
3.0	100/200	1⅛"—4½"	430M	1.24	1.10
3.0	101/201	1⅛"—4½"	455M	1.26	1.12
4.6	320	1"—6½"	None made	1.24	1.10
6.0	100	1½"—6½"	330M	1.20	1.06
6.0	101	1½"—6½"	345M	1.22	1.08
15.0	100	1½"—6½"	425M	.95	....
15.0	101	1½"—6½"	None made	.97	....
15.0	600	1½"—6½"	425M	.97	....
15.0	601	1½"—6½"	None made	.99	....
18.0	501	1½"—6½"	345M	1.00	....
18.0	501(HS)	1½"—6½"	None made	1.02	....

Types

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows: 1⅛, 1½, 2, 2½, 3, 4½ and 6½

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset.
Type 231 Semidull, normal tenacity, high crimp heatset.
Type 320 Bright, high tenacity, high modulus, no crimp.
Type 420 Semidull, high tenacity, high modulus, no crimp.
Type 501 Semidull, normal tenacity for carpets, heatset (HS) or non-heatset.
Type 600 Dull, normal tenacity, not heatset.
Type 601 Dull, normal tenacity, heatset.

These prices are subject to changes without notice.

Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

OLEFIN

Beaunit Mills Inc.

Fibers Division Effective November 1, 1960

Polypropylene Bright Staple

Denier	Price per Lb.
1.5	$.90
3.0	.90
6.0	.90
15.0	.85

Staple cuts are 1½", 2" and 3".

Other lengths are available on request.

Terms: Net 30 days F.O.B. shipping point. Minimum Freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices subject to change without further notice.

Dawbarn Brothers, Incorporated

Effective June 8, 1961

Polypropylene for Outdoor Furniture Tape

Designation	Price Per Pound Average Yield Yds. per Pound	Less Than One Pallet	One Pallet And Over
DLP®57, 100FX8/0	4,500 per end	$1.15	$.80
DLP®51, 1000F/1/0	4,500	1.20	.85
DLP®51, 375/1/0	11,900	1.25	.90

Carton Weight		Average Pallet Weight
54#	1000FX8/0	650#
22#	1000F/1/0	475#
25#	375/1/0	500#

Deduction for Seasonal Shipments—Schedule:

June 1-August 31	(1st Quarter)	$.04 Per Pound
September 1-November 30	(2nd Quarter)	.02 Per Pound
December 1-February 28	(3rd Quarter)	.00 Per Pound
March 1-May 31	(4th Quarter)	.00 Per Pound

Terms:

Net 30 days, F.O.B., Waynesboro, Virginia.
Truckload Shipments (minimum 40 pallets) freight prepaid.
Less truckload shipments—freight collect.
Red yarn .... Add $.03 per pound.

Order Acceptances:

All orders are subject to acceptance at the Home Office in Waynesboro, Virginia.

Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.

Standard Colors

100, White	4.72, Medium Green
331, Red	4.63, Dark Green
432, Turquoise	531, Yellow

All prices subject to change without notice.

"For overseas prices, see export price lists." Our export agent is the Turner Halsey Company of New York City who are now handling all world-wide exports with the exception of Canada.

Dawbarn Brothers, Incorporated

Effective July 1, 1961

Polyethylene and Polypropylene Rope Filament

(FOR CANADA SEE CANADIAN PRICE LIST)

Designation	Size	Price Per Pound Less Than One Pallet	1-119 Pallets	120-199 Pallets	200 Pallets And Over
DLP®61	3000/16	$1.16	$.81	$.80	$.79
DLP®61	182X66/20S	1.17	.82	.81	.80
DLP®60	3000/16	1.08	.73	.72	.71
DLP®60	182X66/20S	1.09	.74	.73	.72
DLP®21	3000/5/0	1.09	.74	.73	.72

DLP®61—Heat and UV Stabilized—Polypropylene
DLP®21—Heat and UV Stabilized—Polyethylene
DLP®60—Heat Stabilized Only—**Natural** (To be used as core yarn only)

Carton Weight		Average Pallet Weight
42	3000/16	500
40	3000/5	500
285	182X66/20S	570

Terms:

Net 30 days, F.O.B., Waynesboro, Virginia
Freight prepaid only on truckload shipments to shipping points East of the Mississippi River.
All less truckloads shipments freight collect.
Orange and Red material .... Add $.03 Per Pound.

Order Acceptances:

All orders are subject to acceptance at the Home Office in Waynesboro, Va.

Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.

Orders must be completed within 90 days from first shipment.

Minimum of three weeks required for items not in inventory.

Standard Colors

Polypropylene		Polyethylene	
DLP®61-104, White	DLP®61-412, Green	110, White	410, Green
DLP®61-237, Blue	DLP®61-506, Yellow	245, Blue	511, Yellow
DLP®61-318, Red	DLP®61-701, Black	340, Red	701, Black
DLP®61-319, Orange	DLP®60-503, Natural		

Standard Colors and Sizes are cumulative on both Polypropylene and Polyethylene in full pallets only.

Above prices are subject to change without notice.

"For overseas prices, see export price lists." Our export agent is the Turner Halsey Company of New York City who are now handling all world-wide exports with the exception of Canada.

Dawbarn Brothers, Incorporated

Effective September 1, 1961

Polypropylene Monofilament Price List (Standard Colors*)

(Price Per Pound)

Designation	Average Yield Yds. Per Lb.	Less Than One Pallet	One Pallet And Over
DLP®51, 375/1/0	11,900	$1.25	$.90
DLP®57, 270F × 24/0	16,500 per end	1.30	.95
DLP®57, 525F × 12/0	8,500 per end	1.25	.90

Carton Weight		Average Pallet Weight
56#	270F × 24/0	675
54#	525F × 12/0	650
25#	375/1/0	500

TERMS:

Net 30 days, F.O.B., Waynesboro, Virginia.
Freight collect on all less truck load shipments.
Freight prepaid on truck load shipments (40 pallets minimum).
* Red, Maroon .... Add $.03 per pound

ORDER ACCEPTANCES:

All orders are subject to acceptance at the Home Office in Waynesboro, Virginia.

MANHATTAN'S GROWTH

(Continued from Page 71)

parently wanted. He had noted that women were wearing men's shirts for casual occasions, either borrowing their brothers' and husbands', or buying their own in men's shops. Stengel was of the opinion that women would love to have feminine styling and proportions combined with menswear details of construction such as with tail, yoke, collar and cuffs of men's shirts.

Stengel's views won out. The plunge into women's wear was notably daring inasmuch as Manhattan had no experience with the special merchandising and marketing practices involved. Nor did it seek a women's wear expert to head the new operation. James E. O'Shields, head of the neckwear and handkerchief departments, was named department head of the newly-formed Lady Manhattan Division.

At first, Lady Manhattan specialized in shirts and its activities were closely linked to men's wear production and merchandising. In eight years, it has grown to be Manhattan's second largest division and is a completely independent operation, except for quality control and research. It has its own offices, its own designers, showrooms, sales and promotions staffs, as well as warehousing and shipping facilities.

Stengel expects a $10 million volume from Lady Manhattan this year, 25% higher than last year. It will come from many more items than the man-tailored shirt that launched the division. In response to consumer demand, a wide variety of colors, patterns, and prints, as well as new fashions such as overskirts and cardigan styles have been added. The Division also sells coordinated skirts and pants in a go-together line, and a color-coordinated program featuring many shirts with one skirt. For spring 1962, a line of spectator sport dresses is being introduced.

Looking to the future, Stengel predicts further diversification in his company's garments for men and women. "However," he qualifies, "we do not plan to go into retail store operation."

The most recent addition to Manhattan's business is its Solway Division which was set up a year ago to distribute merchandise manufactured by Manhattan to be sold under private labels. Stengel emphasizes that the private brand shirts are made to the same standards as Manhattan garments. For this reason, he says, Manhattan will not sell its goods to discount or low margin retailers, but instead is confining its efforts to a few large retail organizations such as Montgomery Ward.

Like many other American corporations, Manhattan's vision has spanned the oceans for international markets in addition to domestic ones. Three years ago, an International Division was established to authorize and supervise licensees overseas. Since most licensees never made or sold a shirt in their lives, Manhattan not only goes in and sets up factories but also teaches manufacturing techniques, advertising, and merchandising skills. It provides this training from the ground up to operators, managers, and owners. Although the International Division has yet to yield a profit, the operation is considered to be successful. Stengel reports that in Japan the biggest selling branded shirt is Manhattan. About breaking even this year, the division is expected to operate in the black in 1962.

Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.

FOR CANADA

Freight collect on all shipments.

All prices quoted in United States Currency.

All Tariffs, Customs, Brokers Fees, etc. to be paid by the Purchaser.

"For overseas prices, see export price lists." Our export agent is the Turner Halsey Company of New York City who are now handling all world-wide exports with the exception of Canada.

Dawbarn Brothers, Incorporated

Waynesboro, Virginia

DLP®3 Polyethylene Ribbon Price List

Designation	Avg. Yield Yds. per lb.	Price Per Pound Less Than One Pallet	One Pallet And Over
DLP®3, 1500R/1/0	2,980	$1.17	$.82
DLP®3, 850R/1/0	5,250	1.21	.86

Carton Weight		Avg. Pallet Weight
31#	1500R	500#
35#	850R	550#

Terms:

Net 30 Days, F.O.B., Waynesboro, Virginia.

Truckload Shipments (Minimum 40 Pallets) Freight Prepaid.

Less Truckload Shipments—Freight Collect.

Red Yarn .... Add $.03 Per Pound

Order Acceptances:

All orders are subject to acceptance at the Home Office in Waynesboro, Virginia.

Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.

All prices subject to change without notice.

POLYESTER

Beaunit Mills Inc.

Current Prices Vycron Semi-Dul Polyester

	Denier	Price Per Lb.
Staple	1.5	$1.00
Staple	3.0	1.00
Staple Cuts are 1⅛" to 6".		
Tow for Converters	1.5	1.00
(Tow Bundle 200,000 Denier)	3.0	1.00

Spun Dyed Black 15¢ per lb. extra.

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be a buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Dacron"** Staple and Tow

Denier	Luster	Type*	Length	Tow Bundle	1st Gr.
1.5	Semidull	35	1¼"-1½"	None made	$1.14
1.5	Semidull	54	1¼"-1½"	None made	1.14
1.5	Semidull	64	1¼"-3"	None made	1.24
2.25	Semidull	64	1¼"-4½"	450M	1.24
3.0	Semidull	54	1¼"-4½"	450M	1.24
3.0	Semidull	61	1¼"-4½"	None made	1.24
3.0	Semidull	64	1¼"-4½"	450M	1.24
4.0	Semidull	64	1¼"-4½"	450M	1.24
4.5	Semidull	54	1½"-4½"	450M	1.24
6.0	Semidull	54	1½"-4½"	450M	1.24
6.0	Semidull	61	1½"-4½"	None made	1.24

* Type:

Type 35—More Pill Resistant Staple for Cellulosic Bends.

Type 54—Semidull, Normal Tenacity.

Type 61—Industrial Staple having 45% Shrinkage. Not intended for Dyeable Uses.

Type 64—More Pill Resistant Staple, with Greater Dyeing Versatility.

"Dacron" Polyester Color-Sealed Black Staple and Tow

2.25	Color Sealed Black	64	1½"-4½"	450M	1.44
3.0	Color Sealed Black	64	1½"-4½"	450M	1.44

F. O. B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

** Dupont's Registered Trade-mark for its Polyester Fiber.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Current

"Kodel"

Denier	HM	Types Semi-Dull I	II	S (Black Only)
1.5 staple only	$1.14	$1.14	$1.14	....
2.25 staple and tow	....	....	1.24	$1.44
3.0 "	....	....	1.24	1.44
4.5 "	....	....	1.24	1.44
6.0 "	....	....	1.24	....
8.0 "	....	....	1.24	....

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Kodel" is a trade-mark of the Eastman Kodak Company.

Celanese Fibers Company

Current Prices Effective April 14, 1961

*Fortrel Polyester Staple and Tow

Staple

Denier	Luster	Price
1.5	Semi-dull	$1.14
3	Semi-dull	1.24
4.5	Semi-dull	1.24
6	Semi-dull	1.24

Staple lengths 1½", 2" and 3".

All staple packaged in 500 pound bales.

Tow

Denier	Luster	Price
3	Semi-dull	$1.24
4.5	Semi-dull	1.24
6	Semi-dull	1.24

Total denier of all tow is 225,000.

All tow packaged in 300 to 400 pound cartons.

TERMS: Net 30 days. F.O.B. destination—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

Prices subject to change without notice.

* Registered Trademark of Fiber Industries Inc.

VINYON

American Viscose Corp.

Effective October 1, 1956

Avisco Vinyon Staple

1.5 denier 1½" Unopened	$.90 per lb.
3.0 denier ½" Unopened	.80 per lb.
3.0 denier 1¼" Unopened	.80 per lb.
3.0 denier 1¼" Opened	.90 per lb.
3.0 denier 2" Opened	.90 per lb.
5.5 denier 1" Opened	.90 per lb.
5.5 denier 1½" Unopened	.80 per lb.

Terms: Net 30 days.

SARAN

The National Plastics Products Company—Fibers Division Odenton, Maryland

Current Prices:

Saran Staple

Type	Denier	Natural	Colors
2Y—Upholstery	22	$0.70	$0.75
2Y—Upholstery	16	.74	.79
3Q—Industrial Fabrics	22	.68	.72
1C—Carpets	22	.68	.72
1M—Mops	22	.68	.72

In any staple length 1¼ to 6". Also 45 denier, 7" cut.

F.O.B. Odenton, Maryland.

Terms: net 30 days.

GLASS YARN

Owens Corning Fiberglas Corp.

A Decorative Continuous Yarn

DE 150 1/0 1.0 TPI .... 53¢ per lb.

F.O.B. Freight Allowed.

U. S. participants in Fiber Congress named

Members of the United States National Committee for the second World Congress of Man-made Fibers to be held in London, England, May 1-4, 1962, have been announced by Royston Dunford, committee secretary. The 21 members represent a cross-section of executives from the fiber and textile manufacturing fields as well as retailing.

They include: E. G. Luke, president, Amerotron Co.; R. M. Dowling, president, Arrow International Division, Cluett Peabody & Co.; J. M. Cheatham, president, American Cotton Manufacturers Institute; R. Dave Hall, president-elect, ACMI; S. C. Owen, president, Beacon Mfg. Co.; Seabury Stanton, president, Berkshire Hathaway Inc.; J. Spencer Love, president, Burlington Industries, Inc.; W. J. Holman, Jr., chairman, Chicopee Mills Inc.; Donald McCullough, president, Collins & Aikman Corp.; Roger Milliken, president, Deering Milliken Inc.

Also, J. R. Dover, Jr., president, Dover Mills Inc.; M. G. O'Neil, president, General Tire & Rubber Co.; James E. Robison, president, Indian Head Mills Inc.; Leon Lowenstein, president, M. Lowenstein & Co. Inc.; Leo Martinuzzi, v.p. for Foreign Affairs, R. H. Macy & Co.; Edward A. O'Neill, Jr., chairman, Man-Made Fiber Producers Association Inc.; Matthew H. O'Brien, president, Man-Made Fiber Producers Association Inc.; A. C. Thompson, president, National Retail Merchants Association; Homer Carter, exec. v.p., Pepperell Mfg. Co.; C. H. Kellstadt, chairman, Sears Roebuck & Co.; Jerome I. Udell, chairman, Max Udell Sons & Co.

The congress, with "The Impact of Man-Made Fibers" as its theme, will spotlight the many-sided role of manmade fibers. The gathering will be the signal for synchronized programs in many countries relating to manmade fibers in general and to fashion in particular. These and allied events will be held in the principal cities of textile manufacturing countries.

Member countries of the sponsoring organization —the Comité International de la Rayonne et des Fibres Synthétiques—include: Argentina, Australia, Austria, Belgium, Brazil, Canada, Finland, France, Federal Republic of Germany, Italy, Japan, Mexico, The Netherlands, Norway, Spain, Sweden, Switzerland, United Arab Republic, the United Kingdom, the United States, and Uruguay.

Delegates to the Congress will take part in a work program of 22 lectures and discussions. J. Spencer Love, president and board chairman, Burlington Industries, will address the congress on "Looking Ten Years Ahead in the Textile Industry." Other speakers from the United States include: Clarence Lapedes, president of Lion Uniform Inc.; William H. Grant, of Sears Roebuck & Co., and Isadore Barmash, editor of Home Furnishings Daily.

Faster output of thread guides achieved

High-speed, semi-automated production of intricate ceramic shapes is now reported possible, using an injection molding process developed by American Lava Corp., Chattanooga, Tenn. Thread guides for the textile industry, insulators, appliance parts, electronic components, radomes, nose cones, dielectrics, refractories and leachable ceramic designs are some of the parts being fabricated under high-speed production conditions.

The injection molding process is helping to solve two problems in technical ceramics processing, according to American Lava. The automated forming operation helps reduce costs by faster production and provides a means of fabricating more complicated shapes from ceramic materials than was previously possible.

CERAMIC THREAD GUIDES can be molded by the same process used in forming this electrical insulator. Piece in background shows size and color after leaving mold. Finished part in foreground has shrunk to specified size and taken on pure white color after firing

Many common ceramic shapes previously pressed or extruded are now molded, eliminating costly hand and machine operations. A thread guide produced by American Lava, once made by machining on a one-at-a-time rate, is now made 14 at a time, all in one "shot". After forming, one machining operation and a drum finisher complete the process, eliminating the multiple machining and hand polishing previously necessary.

More than a dozen ceramic compositions are on the "active" list for injection molding at American Lava. On the list are many of the "AlSiMag" brand compositions produced for many years by American Lava—aluminas, titanium dioxide, forsterite, zircon, spinel, barium titanates, alkali leachable ceramics and others. These materials cover the range of uses for which ceramics are designed, including those requiring specific electrical properties, mechanical strength or chemical and abrasion resistance.

Additional information is available from American Lava Corp., Manufacturer's Road, Chattanooga, Tennessee.

Acrylic Imports Planned

Courtaulds, North America, Inc., has set up a marketing organization in the U.S. to promote imported products made from "Courtelle" acrylic fiber. Homer M. Carter, Jr., formerly in charge of Marketing and Merchandising for Courtaulds (Ala.) Inc., will head the new organization.

NEW Equipment Machinery

New Balloon Control Ring

Mitchell-Bissell Co., Trenton, N. J., has developed a new Reversible Balloon Control Ring that is said to be a time-saver in twisting and spinning operations. With just a flip of the ring, the operator can reverse its twist direction without time-consuming realignment. The base position of the ring remains unchanged. The

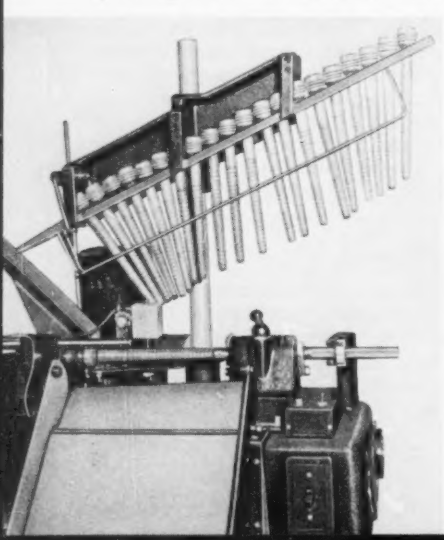
spring-tensioned holder or fixed unit is of plain, durable construction assuring long, trouble-free operation. This is made of die-cast aluminum alloy, while all other parts are stainless steel. The ring itself is electro polished to give a smooth, bright finish.

For complete information and prices, address: Mitchell-Bissell Co., Dept RM, 825 Brunswick Ave., Trenton, N. J.

Electronic Bobbin Tester

Mill production can be improved by using the new Stehedco electronic bobbin tester to keep only straight, true bobbins in use, according to Steel Heddle Mfg. Co. The testers, heretofore only used in Stehedco's plant to check bobbins for runout before shipment, are now available for checking bobbins in use for reduction in production problems by culling those bobbins with an objectionable degree of crookedness.

The electronic bobbin machine semi-automatically measures the degree of runout of loom bobbins at the rate of 37 bobbins a minute and rejects those in excess of a preset level. Culling of such bobbins will insure trouble-free winding and spinning and avoid misalignment problems in the shuttle. *For further information write the editors.*



Automatic Recorder

Designed specifically for research and industrial laboratories, Barber-Colman Co. reports its new automatic extended range recorder has capabilities of measuring unknown and widely varying levels of potential. Having from 2-5 automatic steps of zero suppression the zero is automatically shifted to accommodate any signal within a specified range.

Barber-Colman also is marketing its new 3-dial span and zero recorder, which requires no external calibrating means. The zero and span settings are on calibrated dials; span accuracy is ½ of 1% of the set value, zero settings are accurate to ½ of 1%. Both settings can be read at a glance; more important, the company states, the two settings mean that an unknown can be measured by changing the dial settings without cumbersome time-consuming calibration. One millivolt span and one second cross chart speed are standard.

Improved Arrow Spinning

New type Arrow spinning and twister frames, featuring simplification, of design and operation, were displayed by Roberts Co. at the recent North Carolina Trade Fair. The newly-designed frames are said to permit increased productivity, versatility and dependability.

Roberts president Robert E. Pomeranz reported that contracts for its textile machinery and equipment, so far this year, total more than $2.25 million, up about 600% over 1960. Mr. Pomeranz said there were indications at the fair of a large and growing demand from all areas of the world for modern American-made textile machinery

Roberts has announced two key appointments at its newly-acquired Greenwood Division. D. M. Pitts has been named works manager and Thomas Lee foundry manager.

"Aerodynamic" Card

Whitin Machine Works has developed a new "aerodynamic" carding machine that is reported to increase output by as much as 400% while bettering sliver and yarn quality and improving spinning efficiency of yarns.

The new card uses air to transfer fibers from the cylinder to the doffer and to remove the web from the doffer. It is based on U.S. patent rights Whitin purchased from Ecitex of Ruell-Malmaison, France. A number of prototype machines embodying the new carding principles will be shipped to Whitin's plant at Whitinsville, Mass., and then placed in several mills for trial. Whitin also expects to market in 1962 a card conversion based on the new system.

Improved Ring Lubrication

Dualube—a new ring design said to provide added assurance of adequate lubrication when used with Alemite or Lincoln centralized pressure systems—has been developed by Whitinsville Spinning Ring Co. The manufacturer describes it as the first ring to provide multiple distribution of

grease, as well as oil, around the circumference of the ring.

The new product is already in use on wool spinning frames (available on the Davis & Furber model H frame) and tire yarns, and is equally suited to worsted twisting, carpet yarns, asbestos yarns and similar work, running either metal or nylon travelers. *For further information write the editors.*

Business Service Section

Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

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7 Inches	49.00
8 Inches	52.00

Turn to Page 44.

Here you can SELL - HIRE - BUY

Calendar of Coming Events

Dec. 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

1962

Jan. 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

Jan. 7-11—National Retail Merchants Association, annual convention, The Statler Hilton, New York, New York.

Jan. 11-12—National Cotton Council, Annual Research Clinic, The Carolina Hotel, Pinehurst, North Carolina.

Jan. 14-18—National Association of Textile and Apparel Wholesalers, annual convention, The Statler Hilton, New York, N. Y.

Feb. 7—American Association for Textile Technology, annual conference, Hotel Commodore, New York, New York.

Feb. 15-16—American Society for Quality Control, Textile & Needle Trades Division, annual conference, Clemson House, Clemson, S. C.

Mar. 7—AATT New York Chapter, Monthly Meeting, Hotel Vanderbilt, New York, New York.

Mar. 29-31—American Cotton Manufacturers Institute, annual meeting, Palm Beach Biltmore Hotel, Palm Beach, Florida.

Apr. 4—AATT New York Chapter, Monthly Meeting, Hotel Vanderbilt, New York, New York.

Apr. 11-13—Textile Engineering Division, American Society of Mechanical Engineers, spring meeting, North Carolina State College, Raleigh, N. C.

Apr. 11-13—Fiber Society, joint meeting with Textile Division of ASME, Raleigh and Durham, N. C.

Apr. 17-18—Institute of Textile Technology, Meetings of Technical Advisory Comm. and Board of Trustees, Charlottesville, Va.

May 1-4—World Congress of Man-Made Fibers, Royal Albert Hall, London, England.

May 2—AATT New York Chapter, Monthly Meeting, Hotel Vanderbilt, New York, New York.

May 2-5—Carolina Yarn Association, annual outing, Pinehurst, N. C.

May 10-11—Underwear Institute, 96th annual meeting, New York, N. Y.

May 16-19—Georgia Textile Manufacturers Association, annual convention, The Diplomat Hotel, Hollywood-by-the-Sea, Florida.

May 30-Jun. 2—Tufted Textile Manufacturers Association, national convention, Diplomat Hotel, Miami Beach, Florida.

May 31-Jun. 2—South Carolina Textile Manufacturers Association, annual meeting, Sea Island, Georgia.

Jun. 6—AATT New York Chapter, Monthly Meeting, Hotel Vanderbilt, New York, N. Y.

Oct. 3-4—National Cotton Council, chemical finishing conference, Sheraton Park Hotel, Washington, D. C.

Oct. 10-12—Fiber Society, at Boston and Natick, Massachusetts, Quartermaster Command, host.

Oct. 15-19—Southern Textile Exposition, Textile Hall, Greenville, South Carolina.

Nov. 14-17—Annual Convention of the American Association of Textile Chemists and Colorists, Atlanta Biltmore Hotel, Atlanta, Georgia.

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(See previous or subsequent issues)

BUSINESS SERVICE

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